

# Air Conditioning & REFRIGERATION

Entered as second-class matter Aug. 1, 1927. Trade Mark Registered U. S. Patent Office. Copyright, 1941, by Business News Publishing Co.



# NEWS

## Georgia Power Won't Slack on Sales Activities

### New Appliances May Even Reduce Power Wastage, Salesmen Are Told

ATLANTA—Even though electric power use is being rationed for defense purposes in some of its territory, the Georgia Power Co. sees no reason for a cessation of activity on the promotion and sale of electrical appliances.

The immediate sale of appliances has practically no effect in increasing the immediate use of the service, and where the new appliance replaces an old one, a considerable saving in current consumption may be realized, it was pointed out.

The power company stated its position on appliance sales in the following bulletin to sales personnel: "The announcement of the necessity for curtailing unnecessary uses of power in the southeast, in support of National Defense, makes it apparent that all Georgia Power Co. sales personnel will enthusiastically support this new plan as directed. Full instructions have been issued to the affected personnel.

"A number of factors enable us to continue merchandising while co-operating in all respects with the needs of the defense program. It is hoped that the present emergency will be of short duration and if so, little can be gained by the suspension of activities designed to promote the use of the service in the future.

"The immediate sale of appliances has practically no effect in increasing the immediate use of the service. Sales made today do not reflect increased sales of kwh. for several weeks or months. Additionally, a large percentage of the major appliances being sold are for replacement purposes. A current model refrigerator uses only about half as much electricity as an obsolete model which it replaces. The modern-day electric range consumes, on the average, only about 70% as much electricity as the older and less efficient models replaced.

"It is obvious that a continuation of our merchandising activities will not immediately increase the consumption of electricity but, on the other hand, will in a very definite sense assist in the conservation program."

## Curtis Strike Settled; No Holdup on Orders

ST. LOUIS—Efforts of the Defense Mediation Board has brought about a settlement of the strike at Curtis Mfg. Co., parent company of the Curtis Refrigerating Machine Co.

H. C. Morrison, sales manager of the Curtis Refrigerating Machine Co., says that shipments are now being made without delay because of the large stock built up during a heavy production schedule last year.

## Creditors of Deissler To Meet June 20

ERIE, Pa.—First meeting of creditors of Victor G. Deissler, trading as Deissler Machine Co., is scheduled to be held at 10 a.m. June 20 at the courthouse, court room 2, Mercer, Pa.

This announcement was made last week by Ritchie T. Marsh, referee in bankruptcy, United States District Court, western district of Pennsylvania. At the meeting the creditors will prove their claims, and elect a trustee.

## Airtemp Clinic Is Peep Into Future Of Air Cooling

By Henry Knowlton

DAYTON, Ohio—How air conditioning is aiding American business in every field during the present defense emergency—from giant steel mills to small retail shops—and the probable influence of the industry on our post-war economy, were discussed by trade, vocational, and professional editors attending the first "Round Table Clinic on Air Conditioning" sponsored by the Airtemp division of Chrysler Corp. here last week.

The one-day meeting was called by D. W. Russell, president of Airtemp, and Ward H. Barnett, merchandise manager of the company acted as general chairman and toastmaster. Following the luncheon Merle Thorpe, editor of "Nation's Business," spoke to the visiting editors and guests.

Mr. Thorpe pointed out that the basic difference between man and beast is the fact that while both show dissatisfaction with things as

(Concluded on Page 19, Column 1)

## Gov't Control Over Cork Is Complete

WASHINGTON, D. C.—Following earlier telegraphic instructions to cork manufacturers, telling them to cut their processing operations in half, Priorities Director E. R. Stettinius, Jr. of the Office of Production Management announced June 2 a new general preference order putting cork under industry-wide control.

The order provides that on June 12, and thereafter, each supplier is required to set aside his entire stock of cork in all forms, as a reserve out of which the Director of Priorities will make allocations to defense orders. In allocating remaining cork among competing civilian needs, it

(Concluded on Page 2, Column 4)

## Crosley Prices Up; Leader Is Dropped

CINCINNATI—Advanced refrigerator prices of \$5 and \$10 and withdrawal from the line of Model A641, which was priced at \$114, have been announced by Crosley Corp. Both moves were made effective June 4.

The \$5 price boost applies to all 6-cu. ft. models up to the deluxe "Moist-Kold" six on which the price was advanced \$10. Prices of the two 8-cu. ft. models also were advanced \$10.

Revised price range (for zone 1) of the Crosley refrigerator line is \$127.95 to \$227.45. These prices are guaranteed only as of date of receipt of order, according to J. F. Crossin, manager of the company's refrigerator division.

## NRDGA Seeks Stiffer Instalment Terms

CHICAGO — Recommending that an effort be made to "cushion the effect of the inevitable let-down which follows periods of prosperity" by restricting instalment terms and by setting up a special committee to study and suggest basic credit policies and to plan ways and means of putting such policies into effect, the credit management division of the National Retail Dry Goods Association has adopted the following resolution:

(Concluded on Page 2, Column 5)

## 'Advertising Refrigerators With Full Tray Equipment Unfair'—Stettinius

Office of Production Management  
Division of Priorities  
Social Security Building, Washington, D. C.

June 4, 1941

To All Refrigerator Manufacturers:

It has been called to our attention that refrigerator manufacturers are giving various interpretations to our letter of March 6.

Some, for example, are said to have instructed distributors and dealers to return the aluminum trays from the refrigerators in their stocks. Others have been asked to simply remove a portion of the trays from the refrigerators now in their stocks and to use them for new refrigerators coming through without trays. (This presupposes similar design, of course.) We are informed that still others have advised their distributors and dealers to sell all refrigerators that were in stock prior to March 6 with a full complement of trays.

In the last case, the advertising for sale of the refrigerators in stock before March 6 is said to feature the fact that these boxes have a full complement of aluminum trays.

The last case seems to us to be unfair competition and a violation of the spirit, if not the letter, of our request made on March 6. We do not wish to issue any order on the subject because of the variety of factors involved as far as each manufacturer is concerned. However, we do want to have the spirit of our letter of March 6 observed carefully.

May we have a letter from you advising us of the policy you have adopted which you feel observes the spirit of our earlier letter?

Sincerely yours,

E. R. STETTINIUS, JR.  
Director of Priorities

## E.E.I. Head Derides Hickey Manages N. Y. 'Power Shortage' Copeland Branch

BUFFALO—Asserting that the large scale increases in electric refrigerator and range sales so far this year "represent a broad need which it is our duty to develop in the public interest," C. W. Kellogg, president of Edison Electric Institute, opened that organization's three-day meeting here last week by pooh-poohing all talk of possible power shortage and expressing the opinion that electric utilities should continue their active sales efforts during the present emergency.

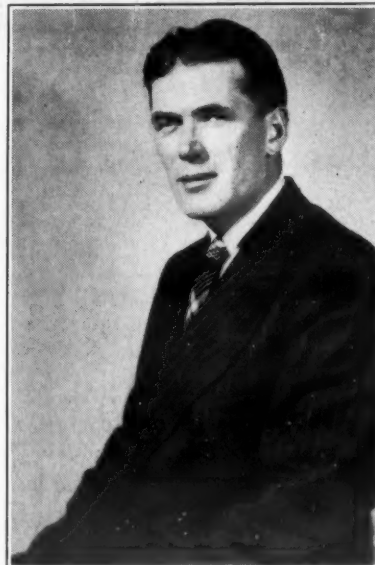
Until the elements of time, location, and nature of electric power

(Concluded on Page 2, Column 5)

## 'Antequarium' Planned For All-Industry Show

CHICAGO—When the Fourth All-Industry Refrigeration & Air Conditioning Exhibition throws its doors open to the members of the trade on Jan. 12 next at the Stevens hotel, Chicago, it will present a new attraction not commonly found in trade shows in addition to the greatest array of individual company displays ever assembled in the industry, says Chairman C. H. Benson of

(Concluded on Page 20, Column 3)



G. L. HICKEY

NEW YORK CITY—G. L. Hickey, Jr. on June 9 took over the position of manager of the Copeland Refrigeration Co. of New York, one of the oldest direct factory branches in the refrigeration industry.

Mr. Hickey was formerly assistant export manager for Servel, Inc., in which capacity he was in charge of commercial refrigeration activities covered by distributors in all parts of the world, preparing estimates for

(Concluded on Page 2, Column 5)

## The Answer To Air Attacks!

By George F. Taubeneck

"Successful defense against airplane attacks could turn the fate of the world," declared ex-President Herbert Hoover last Saturday night. "The airplane was born from the science of physics," Hoover added. "The answer might come from there. And it imperatively demands research and more research—and at once."

Mr. Hoover, you're right. But that isn't the half of it. "One of our boys" has the answer for you. A leading refrigeration engineer has shown us a foot-thick sheaf of drawings and blue-prints for a device which should bring down all the bombers and fighting planes in the world.

Just as you suggest, Mr. Hoover, this device comes from "the

(Concluded on Page 20, Column 2)

## Industry Buyers Of Metals Don't Need Affidavits

### New Interpretations And Orders Given On Copper, Brass

DETROIT—The situation as respects government control and priorities on copper and brass underwent further changes last week, but one point of major interest to the refrigeration trade seemed to become clear—neither jobbers nor manufacturers will have to file inventory statements "Form PD-19A" in order to get copper or brass products.

Copper is no longer one of the metals included in General Metals Order No. 1 (under which the inventory statements were demanded). By General Preference Order No. 9 of the Division of Priorities copper has been removed from General Metals Order No. 1 and added to the list of vital defense metals under mandatory, industry-wide control.

This Order No. 9 says that refiners of copper must set aside an amount of copper equal to 20% of their April, 1941 production for a pool which will be administered directly by the Director of Priorities.

Remaining 80% of copper production will be allocated by Leon Henderson, Administrator, Office of Price Administration and Civilian Supply.

The civilian program on copper supply, first to be issued by OPACS, takes into account the need for providing as much copper as possible for civilian uses; hardships which will be imposed on labor or business by restrictions; past rates of consumption by fabricators; the desirability of pro-rating copper as equitably as possible among fabricators; availability of substitutes.

As concerns those products for the refrigeration industry which are still affected by General Metals Order No. 1, such as brass fittings, for example, it appears that buyers of products in finished form have no obligation to fill out inventory statements or any other type of government form.

An official interpretation (Release PM 416) from the OPM on this point says:

"Items such as finished pistons, connecting rods, valves, pipe, completed eye-beams, bolts, wire, spikes, etc., are considered as being in finished form and not in semi-processed or pre-manufacturing form, and therefore not within the terms of said Order, regardless of the further incorporation in other assemblies, or as parts of other finished products, necessary to make them practically available for ultimate use."

However, if brass is bought in "semi-processed or pre-manufacturing" form (such as brass rod) and undergoes further processing or manufacturing before assuming the finished form in which it is to be ultimately used, then the purchaser is deemed a "customer" under the terms of General Metals Order No. 1 and must make an inventory statement. However, this apparently will not apply to the general run of buyers of brass products in the refrigeration industry.

## April Shipments of Ranges Gained 50%

NEW YORK CITY—Shipments of household electric ranges to distributors and dealers in the United States and possessions hit an all-time high during April of 65,692 units to go more than 50% over the 43,308 units reported for the same

(Concluded on Page 2, Column 4)



## Defense Occupies Firms; 'Washer Week' Dropped

CHICAGO—Plans for the 1941 observance of National Washer-Ironer Week have been dropped by the executive committee of American Washer & Ironer Manufacturers Association, reports J. R. Bohnen, executive secretary. The event was to have been held Oct. 18 to 25.

Reason for the action, says Mr. Bohnen, is that most home laundry equipment manufacturers will be occupied with national defense projects, for which they at present are negotiating.

## Dance's Distributorship Sold To Frigidaire

OKLAHOMA CITY, Okla.—W. C. Dance, for 25 years operator of the Frigidaire distributorship bearing his name, has left the organization, selling it to the Frigidaire division of General Motors Sales Corp.

In 1916 Mr. Dance drove into this city with a Delco farm light plant strapped on the back of a model T and started his firm. This light plant was the first in the state, and attracted much attention.

D. T. Hayward, Frigidaire veteran and Dance sales manager for the past four years, will head the firm. John Varnell will be sales promotion manager; H. J. Murphy, commercial manager; W. F. Scott, comptroller.

When Mr. Dance sold the first Frigidaire in Oklahoma he had three employees. The firm now has 24 employees and supplies 175 dealers.

## Advertising Important In Defense Effort, Says G. M. Official

NEW YORK CITY—Emphasizing the importance of advertising in the national defense effort, Paul Garrett, vice president in charge of public relations of General Motors Corp., warned here recently that to abolish advertising would be to abolish dealers and overthrow our present process of distribution.

In an address at a luncheon meeting of the Advertising Club of New York, Mr. Garrett, who also is chairman of the board of the Advertising Federation of America, pointed out that the defense program has increased rather than minimized the significance of advertising to the public as well as from the viewpoint of dealers and manufacturers.

"I am sure that I do not need to measure the relative importance of different elements contributing to the power of our industrial system," Mr. Garrett commented. "But I do say not enough people have understood that in our great mass designing, mass engineering, mass producing, mass consuming economy, our mass advertising of the product has been an integral part of the formula."

Asserting that advertising's new job is to explain clearly to the public those facts about a fast changing production industry which it may be difficult to understand, Mr. Garrett further stated:

"Customers are going to be confused. They will need explanations. They will need reasons for shortages, for higher prices, for substitutions,

for changes from their accustomed buying habits. And upon the clarity and the integrity with which advertising performs this task the future of industry may depend.

"It is no time to think of advertising only in advertising terms. We must think of it now, if ever, in public relations terms. We need to watch what we say and how we say it for its effect on people not merely as customers, but as citizens of a country bending great efforts to produce materials of war for its own defense and for its own future greatness."

## Metals Priorities May Cut Production of Radios 30%

BUFFALO—William A. Gardner, president of Colonial Radio Corp., which manufactures radios for Sears, Roebuck & Co. and for General Motors Corp., has revealed that the firm may have to reduce civilian radio production 25 to 30% this year as a result of the diversion of steel, aluminum, and zinc to defense.

He further stated that the company has received a \$1,000,000 contract to make short wave radios for use in British fighting planes. Material priorities are being received on this order, and there will be no curtailment of present production or employment, Mr. Gardner said.

Colonial produced approximately 640,000 radio sets during 1940. A 30% output cut would mean 1941 output of approximately 450,000 sets. So far, there has been practically no curtailment, Mr. Gardner declared.

## Cork Under Strict Priority Rules

(Concluded from Page 1, Column 2) was stated, the director will be guided by a civilian allocation program announced by the Office of Price Administration and Civilian Supply and based upon such factors as:

The need to provide for civilian uses essential to the public welfare; degree of hardship on labor or business resulting from restricted supply; past requirements of customers; need for equitable distribution of supplies of cork among customers for cork; availability of substitutes; and the OPACS policy of refusing to allocate cork supplies to any person discriminating against defense orders.

Cork is defined in the order as "unmanufactured cork in all forms, including cork wood, bark, waste, shavings, and refuse."

## Range Sales Keep Up 50% Increase Mark

(Concluded from Page 1, Column 5) month of 1940, according to figures compiled by National Electrical Manufacturers Association from reports of 20 manufacturers.

For the first four months of this year, electric range sales have reached an all-time high mark for that period of 229,645 units, an increase of more than 50% over the 152,344 units shipped during the same period of last year. All figures cover only shipments to distributors.

## Stricter Terms Goal Of Dept. Stores

(Concluded from Page 1, Column 2) "Be it resolved that:

"Installment terms be revised so as to require larger down payments and shorter maximum terms, with a view to minimizing credit losses and maintaining continued consumer purchasing power.

"More complete credit investigations be made of all classes of accounts, and this information carefully recorded for future guidance.

"Care be exercised in the selection of all new applications for regular charge services, so that those who have built up records of thrift will not be penalized because of the collection of those whose work is of a temporary nature.

"We are cognizant of the entire field of retail stores who will need the benefit of the best advice in outlining and directing the major credit policies during the days to come.

"The management of the N.R.D. G.A., set up in the near future a committee, made up primarily of store owners and representative members of the interested divisions of N.R.D.G.A., for the purpose of studying and recommending basic credit policies and for planning and recommending means of putting such policies into effect."

## Copeland N. Y. Branch Gets New Manager

(Concluded from Page 1, Column 4) commercial refrigeration and air conditioning installations, and also being in charge of sales promotion and advertising on commercial refrigeration for export.

A "10-year-man" in the refrigeration industry, Mr. Hickey has had a wide variety of experience in many phases of the refrigeration business. A graduate of Massachusetts Institute of Technology, Mr. Hickey joined Servel as a commercial refrigeration field sales representative in 1931. He then located at Servel's Pittsburgh branch, handling engineering and supervising service and installation. From December, 1934 to May, 1935 he was with York Ice Machinery Corp. as assistant to Henry J. Brysselbout in commercial refrigeration application work. He left York to take the position in the Servel export department.

Copeland's New York branch was incorporated in August, 1926. Probably there are few direct factory branches of refrigeration manufacturing firms with a longer continuous existence, and probably none with a more colorful history, for the branch was in the center of the apartment house multiple installation boom and the high pressure commercial refrigeration selling days of the late 20's and early '30's.

## Kellogg Urges Utilities To Keep Merchandising

(Concluded from Page 1, Column 3) requirements have been applied to a given situation, Mr. Kellogg maintained, allegations of a power shortage are unwarranted. He declared that once these considerations have been applied, it was his belief that the power situation would be found to have been adequately provided for.

In defense of continued merchandising activity on the part of the power companies, Mr. Kellogg had this to say:

"Nothing has been brought out more clearly, from the experience both of this war and the World War a generation ago, than the paramount importance of the Home Front—not for sentimental reasons alone, but also as a very practical measure of national defense.

"In this field, electricity plays an important part. Agreeable conditions in the home mean better and more efficient work in the munitions factories."

## Vacuum Cleaner Sales Jump 26% In March

CLEVELAND — March vacuum cleaner sales totaled 224,329 units, an increase of almost 26% over the 178,681 units reported sold during the same month last year.

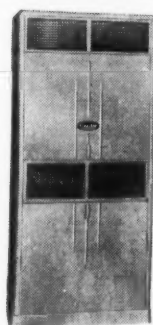
# Here's a 5 STAR Year 'Round Profit Opportunity



## Carrier



**AIR  
CONDITIONING**



Self-Contained  
Weathermakers



Room Weathermakers



**SPECIALTIES**



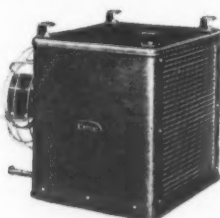
Humidifiers



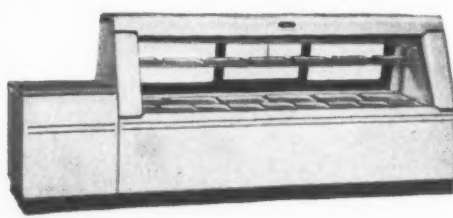
Portable Room Ventilators



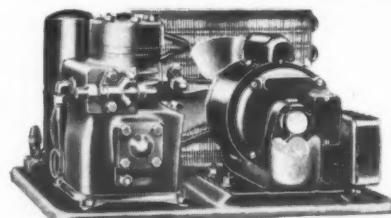
**COMMERCIAL  
REFRIGERATION**



Cold Diffusers



Display Cases



Refrigeration Compressors



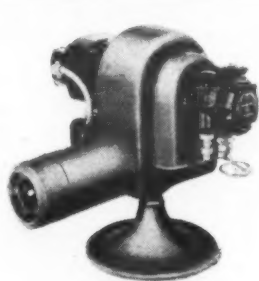
Water Coolers



**RESIDENTIAL  
HEATING**



Home  
Weathermakers



Oil Burners



**INDUSTRIAL  
HEATING**



Unit Heaters

Why put up with slack seasons? Why let profits decline during these seasons, see salesmen become discouraged, watch competitors make money while you mark time?

Hundreds of wide awake dealers are finding in Carrier the ideal answer to these pressing questions. From Carrier's complete lines of nationally advertised equipment, they select the merchandise needed to round out their present lines. Result? Salesmen are saved from "let down" periods . . . every

month of the year is a producing month . . . prestige and reputation are increased due to broader public appeal and association with a world famous name.

Remember—the equipments illustrated are but a few of the scores of different units now being manufactured by Carrier in all these five fields. So take advantage of Carrier's 39 years of experience—write today for full details on Carrier Franchises available in your territory.

CARRIER CORPORATION, SYRACUSE, N. Y.

"Weather Makers to the World" Desk F12

Please send full information on the new Carrier Dealer Franchise for ☐ Air Conditioning ☐ Commercial Refrigeration ☐ Residential Heating ☐ Industrial Heating ☐ Specialties.

NAME.....

ADDRESS.....

CITY.....STATE.....



## Bell Heads Coast Conditioning Men

SAN FRANCISCO—I. C. (Ike) Bell of Drayer & Hanson Co. was elected president of the Air Conditioning Society of San Francisco at the annual meeting of the association here last week. The major activity of the group, during the coming year, will be the promotion of air conditioning sales.

Jess E. Rauch, of California Refrigerator Co., is the new vice president and James R. Hedge of the Pacific Gas & Electric Co., was re-elected secretary of the association.

A tabulation of the commercial air conditioning sales made in San Francisco was submitted, and although San Francisco, with its temperate year-around climate is not considered a good air conditioning market, the survey revealed that 102 installations were made from 1938 to 1941.

The installations averaged 16.3 hp. per job, making a total of 1,658 installed horsepower on air conditioning systems.

It was reported that three San Francisco residences have installed air conditioning systems in addition to the commercial units in use.

## Prisoners and Sheriff To Get Conditioning

APPLETON, Wis.—An air conditioned jail is included in the plans for the new Outagamie County Court House, now under construction here. Conditioned air also will be introduced into the de-lousing room and the infirmary, and to offices in the building.

Cells in the jail itself will be equipped with special extra-heavy, non-removable barred openings over air outlets.

To be finished early this fall, the structure was designed by Raymond N. LeVie, architect, and Maurey Lee Allen.

## Supercharger Factory To Be Conditioned

EVERETT, Mass.—A windowless, air conditioned factory, to be used for the manufacture of superchargers for military and other airplanes, is being erected on the marshes near Revere Beach Parkway by the General Electric Co. The plant, costing a total of \$1,500,000 will be operated on a 24-hours per day basis.

The steel roof will be camouflaged to merge with the appearance of the marshes from above, and will serve as a deck for an acoustical ceiling. The insulated structure will be supported by 770 concrete caissons and will be lighted throughout with fluorescent lamps.

## Smith Inspecting Bomber Plant For Army

KANSAS CITY, Kan.—Elwyn L. Smith, formerly manager of the Air-Rite Corp. of Dallas, Tex., is now employed by the Corps of Engineers, U. S. Army, in connection with the new bomber plant being erected here.

Mr. Smith is chief inspector, in charge of air conditioning, plumbing, and heating for the new defense plant.

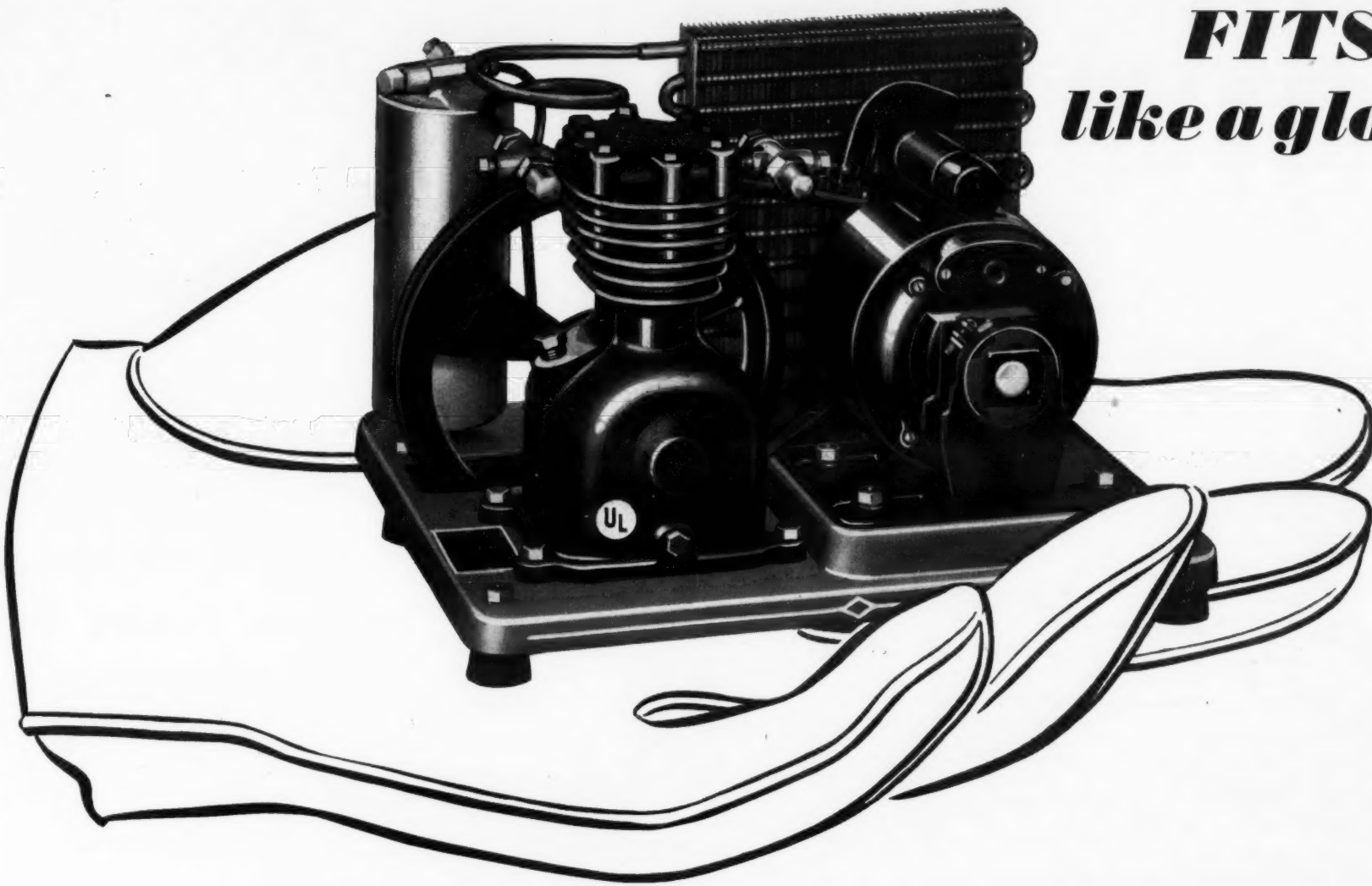
## Hospital Plans Conditioning For New Operating Rooms

BUFFALO—Millard Fillmore hospital has announced plans for a four-story \$445,000 addition including four major operating rooms and two minor operating rooms which will be air conditioned to maintain constant relative humidity and temperature. Work will start about June 1.

## Welter Heating Moves To Larger Quarters

MINNEAPOLIS—Welter Heating & Air Conditioning Co. has moved its offices from 410 W. Lake St. to larger quarters at 4637 Chicago Ave.

...and it  
**FITS**  
like a glove!



# PAR CLOSE-COUPLED REFRIGERATION CONDENSING UNIT

**H**ERE'S a PAR unit engineered especially for Refrigeration Cabinets, Cooler Counters, Display Cases, Fountain Coolers, etc. . . and it fits such a job "just like a glove". Into this compact close-coupled design, PAR engineers have built rugged dependability and abundant power for economical operation. PAR close-coupled models are available in 1/5 H.P., 1/4 H.P., and 1/3 H.P. sizes . . . furnished with flexible rubber supports of rigid feet . . . with or without condenser shroud.

This clean cut model has earned wide favor among manufacturers of refrigerated display equipment . . . because here in one compact package is all of the machinery necessary to make their equipment perform successfully . . . to give complete satisfaction for years on end. If you manufacture such equipment as this we invite you to investigate this and other PAR models where performance counts . . . always choose PAR!

30 MODELS • 2 and 4 CYLINDERS • 1/5 to 5 H.P. • SEE YOUR JOBBER

**ALABAMA**  
MOBILE—MOBILE REFRIGERATION SUPPLY CO.  
MONTGOMERY—TEAGUE HARDWARE COMPANY

**ARIZONA**  
PHOENIX—J. CARL WHITE COMPANY

**CALIFORNIA**  
FRESNO—ARBELL REFRIGERATION SUPPLY CO.  
LONG BEACH—REFRIGERATION SUPPLIES

**DISTRIBUTORS**  
LOS ANGELES—REFRIGERATION SUPPLIES

**DISTRIBUTORS**  
OAKLAND—CALIFORNIA REFRIGERATOR COMPANY

SACRAMENTO—HINSHAW SUPPLY COMPANY  
SAN DIEGO—REFRIGERATION SUPPLIES

**DISTRIBUTORS**  
SAN FRANCISCO—CALIFORNIA REFRIGERATOR CO.

**CONNECTICUT**  
NEW HAVEN—RESCO, INC.

**FLORIDA**  
JACKSONVILLE—BOWEN REFRIGERATION SUPPLY, INC.

MIAMI—BERNER-PEASE COMPANY  
TAMPA—BOWEN REFRIGERATION SUPPLY, INC.

WEST PALM BEACH—MOTOR PARTS & EQUIPMENT CO., INC.

**GEORGIA**  
ATLANTA—BOWEN REFRIGERATION SUPPLY, INC.

MACON—LOWE ELECTRIC COMPANY

**ILLINOIS**  
CHICAGO—AUTOMATIC HEATING & COOLING CO.

CHICAGO—H. W. BLYTHE COMPANY  
PEORIA—MARQUETTE EQUIPMENT COMPANY

**INDIANA**  
INDIANAPOLIS—F. H. LANGSENKAMP COMPANY

SOUTH BEND—F. H. LANGSENKAMP COMPANY

**IOWA**  
CEDAR RAPIDS—DENNIS REFRIGERATION SUPPLY COMPANY

DAVENPORT—REPUBLIC ELECTRIC COMPANY  
DES MOINES—DENNIS REFRIGERATION SUPPLY COMPANY

SIOUX CITY—DENNIS REFRIGERATION SUPPLY COMPANY  
WATERLOO—WINTERSBOTTOM SUPPLY COMPANY

**KANSAS**  
WICHITA—HOWARD SUPPLY COMPANY

**KENTUCKY**  
LEXINGTON—UNITED SERVICE COMPANY, INC.

LOUISVILLE—S. W. H. SUPPLY COMPANY

**MARYLAND**  
BALTIMORE—PARKS & HULL APPLIANCE CORP.

**MASSACHUSETTS**  
PITTSFIELD—AIRD-DON COMPANY

SPRINGFIELD—C. P. PAYSON COMPANY  
WORCESTER—STANDARD SUPPLY COMPANY, INC.

**MICHIGAN**  
FLINT—LIFSEY DISTRIBUTING COMPANY

GRAND RAPIDS—B. F. HARRIS & SON

**MINNESOTA**  
MINNEAPOLIS—REFRIGERATION & INDUSTRIAL SUPPLY COMPANY

**MISSOURI**  
KANSAS CITY—FORSUMD PUMP & MACHINERY COMPANY

ST. LOUIS—BRASS & COPPER SALES COMPANY

**NEBRASKA**  
LINCOLN—WICKHAM SUPPLY COMPANY

OMAHA—INTERSTATE MACHINERY & SUPPLY CO.

**NEW JERSEY**  
NEWARK—T. W. BINDER COMPANY

**NEW YORK**  
ALBANY—AIRD-DON COMPANY  
SINGHAMTON—W. A. CASE & SON

MANUFACTURING CO.  
BROOKLYN—COLEMAN ELECTRICAL SUPPLY COMPANY, INC.

BUFFALO—ROOT NEAL & COMPANY  
KINGSTON—AIRD-DON COMPANY

NEW YORK—FIDELCO INDUSTRIES, INC.  
PLATTSBURGH—AIRD-DON COMPANY

SCHENECTADY—AIRD-DON COMPANY  
SYRACUSE—CENTRAL SERVICE SUPPLY COMPANY

TROY—AIRD-DON COMPANY

**NORTH CAROLINA**  
CHARLOTTE—HENRY V. DICK & COMPANY

GREENSBORO—HISCO, INC.  
RALEIGH—HENRY V. DICK & COMPANY

**OHIO**  
AKRON—PERCY G. HANSEN

CINCINNATI—MERKEL BROTHERS COMPANY  
CLEVELAND—DEBES & COMPANY

DAYTON—W. H. KIEFABER COMPANY  
TOLEDO—HEAT & POWER ENGINEERING CO.

**OKLAHOMA**  
OKLAHOMA CITY—MIDDEK SUPPLY COMPANY

TULSA—MACHINE TOOL & SUPPLY COMPANY

**OREGON**  
PORTLAND—JACOBS & GILE, INC.

**PENNSYLVANIA**  
ERIE—W. A. CASE & SON MANUFACTURING CO.

PHILADELPHIA—VICTOR SALES & SUPPLY  
PITTSBURGH—JOSEPH WOODWELL COMPANY

SCRANTON—CENTRAL SERVICE SUPPLY CO.

**SOUTH CAROLINA**  
COLUMBIA—HENRY V. DICK & COMPANY

**TENNESSEE**  
CHATTANOOGA—PEGAR MACHINERY COMPANY

KNOXVILLE—HENRY V. DICK & COMPANY  
MEMPHIS—UNITED REFRIGERATOR SUPPLY CO.

NASHVILLE—ELECTRA DISTRIBUTING CO.

**TEXAS**  
CORPUS CHRISTI—HOLSWORTH EQUIPMENT CO.

DALLAS—ELECTROMOTIVE CORPORATION  
EL PASO—J. CARL WHITE COMPANY

HOUSTON—D. C. LINGO COMPANY  
LUBBOCK—R & R PARTS & SUPPLY COMPANY

WICHITA FALLS—UNITED ELECTRIC SERVICE CO.

**VIRGINIA**  
NEWPORT NEWS—NOLAN COMPANY

NORFOLK—NOLAN COMPANY  
RICHMOND—A. R. TILLER, INC.

**WASHINGTON**  
SPOKANE—REFRIGERATION PARTS SUPPLY CO.

**WEST VIRGINIA**  
CHARLESTON—AIR CONDITIONING & REFRIGERATION SUPPLY

**WISCONSIN**  
MILWAUKEE—REFRIGERATION SPECIALTY CO.

**CANADA**  
MONTREAL, QUEBEC—RAILWAY & ENGINEERING SPECIALTIES, LTD.

TORONTO, ONTARIO—RAILWAY & ENGINEERING SPECIALTIES, LTD.

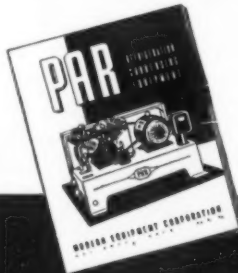
VANCOUVER, BRITISH COLUMBIA—FLECK BROS., LTD.

WINNIPEG, MANITOBA—RAILWAY & ENGINEERING SPECIALTIES, LTD.

EXPORT DEPARTMENT

MELCHIOR, ARMSTRONG, DESSAU COMPANY, RIDGEFIELD, N. J.

Catalog of Complete Line Sent on Request



MODERN EQUIPMENT CORPORATION

DEFIANCE, OHIO



## Birmingham Getting Big Cooling Systems

BIRMINGHAM, Ala.—Air conditioning activity is running at a high pitch here this season—with one of the largest installations being made in the new Sears, Roebuck & Co. store by Shook & Fletcher Supply Co., Carrier distributor.

The same concern is installing a refrigeration storage air conditioning system in the First Methodist Church, where cold water will be used as the refrigerant. A 7½-ton refrigerating machine will be used to store ice on coils in a tank located in the basement, and the chilled water produced will be piped to an air conditioner located in the attic of the church. Ice will be built up throughout the week for use during the estimated 8 hours when air conditioning is required.

This method makes it possible to handle the job with much smaller refrigerating equipment than would otherwise be necessary.

The distributor is also installing a winter air conditioning system in the church, replacing a 50-year-old heating system. The same ductwork will be used to supply warm air in winter.

The Birmingham Electric Co. has asked for bids on an estimated 160-ton installation for its office building and it is expected that the contract will be let soon.

The Bethune Electric Co. has been awarded the contract to air condition the State Supreme Court building in Montgomery, Ala., where Chrysler Airtemp and Trane equipment will be used.

## Self-Contained Units Afford Comfort To Pittsburgh Bowlers

PITTSBURGH—Claiming to be this city's first "real air conditioned bowling alleys," the Strand Alley has been equipped with a York air conditioning system by Electric Products Corp.

Refrigeration is supplied by two York 1001 self-contained 5-hp. compressors supplying 4,000 c.f.m. of air. Operating cost is reduced because the full 10-hp. capacity of the plant is never required at one time, said F. A. Suter, engineer.

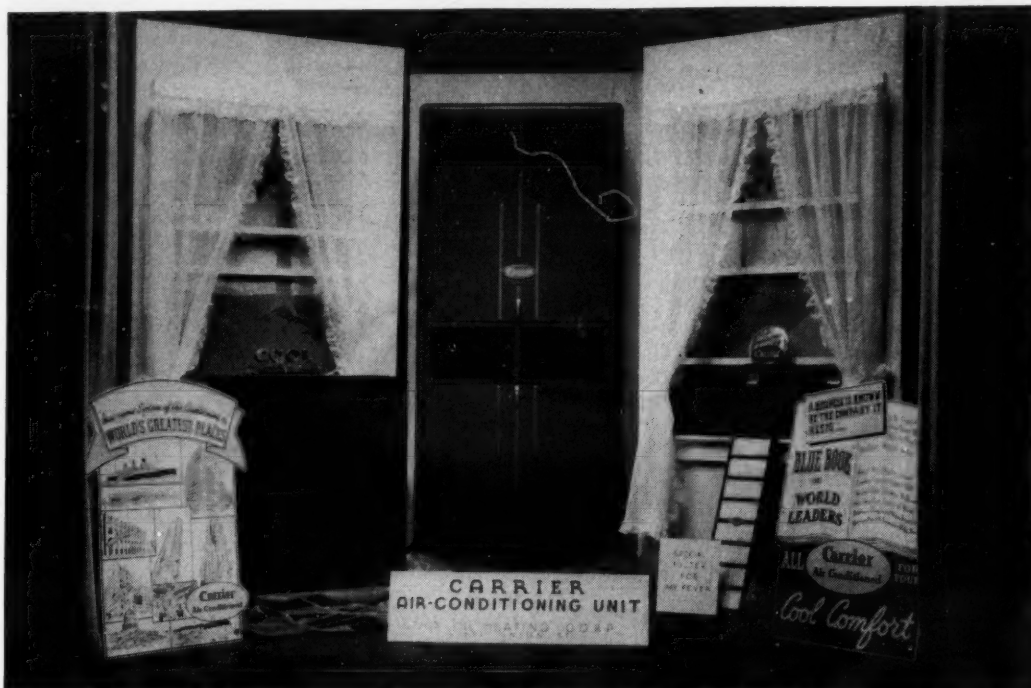
Conditioned air is delivered behind the foul line, one outlet serving two alleys. There are six outlets installed. Return air intakes are located 8 feet off the floor at the opposite end of the alleys, so that all smoke is blown away from the bowlers.

Proprietor Hilary Wertz prominently mentions the air conditioning in a big sign painted on the wall above the pinboys.

## Philco April & May Sales Up 40%

PHILADELPHIA—Sales of Philco air conditioning units for the months of April and May were approximately 40% ahead of total sales for the entire season last year, the company reports. Coupled with this increase in volume was the fact that the average unit value is up 10%.

## 'Packaged' Air Conditioning In a Window Display



This attractive display of Carrier packaged air conditioning equipment was featured in a window of the Central New York Power Corp., Utica, N. Y. The Utica Oil Heating Corp. arranged and installed the display.

## River Water To Cool Minneapolis Boat

MINNEAPOLIS—With river water to be used for cooling the compressor, an air conditioning system is being installed in a 40-foot boat by E. B. Kelly Co. here, specializing in air conditioning, refrigeration, and ventilation equipment.

For two and one-half years Mr. Kelly, ill with a heart ailment, operated the firm from a bed installed in his office.

## E. O. Shreve Tells of Jobs Created By Electrical Industry

CORONADO, Calif.—As a result of research and invention, 15 million American men and women are working in jobs that did not exist in 1900, E. O. Shreve, General Electric vice president in charge of sales and president of the National Electrical Manufacturers Association, declared here recently in a report on the electrical manufacturing industry's contribution to industrial, economic, and social progress.

Addressing the Pacific Coast Electrical Association convention, Mr. Shreve said that all industry, including the electrical, has contributed far more toward the social and economic advance of our country than the public understands or recognizes.

"The great progress made in the electrical manufacturing industry has been the result of fine cooperation on the part of all branches of the electrical industry," he pointed out, "and has been motivated only by the ideals of wishing to conduct business-like commercial enterprise and to serve well the interests of the public."

Mr. Shreve then told his audience about the progress made by the electrical manufacturing industry in the fields of power generation, distribution, and industrial and consumer utilization.

With regard to having put more electrical horsepower at the command of the shop worker, he said, "We have increased labor's compensation and, by a larger and better application of electric power, we have helped to produce material and equipment on a lower cost basis, thus increasing the field of application and making it possible to increase employment when industry is taken as a whole."

"We in the electrical manufacturing industry are taking our responsibilities very seriously in relation to preparedness. We have already undertaken to produce well over a billion dollars worth of material direct for defense. We have added thousands of men, and we will add and train thousands more. We are adding millions of feet to our plants at a cost of between 100 and 200 million dollars."

Mr. Shreve mentioned the following equipment that is being produced by the electrical manufacturing industry for defense: turbines and gears for ship propulsion, electric drives for submarines and combat tanks, naval gun mounts and ammunition hoists, searchlights for aircraft and anti-aircraft lighting systems—some of them 60 inches in diameter, delivering 800,000,000 candlepower—radio transmitting and receiving apparatus, turbo-superchargers which permit airplanes to operate with full power at high altitudes, propeller pitch control devices, motors and special generators for airplane service, many instruments for air service, ordnance control equipment of many sizes and varieties, guns, shells, switchgear, wire and cable, and other devices.

"But eventually war and defense efforts will end and life will go on. Where will we be in that picture? Our contribution to industrial, economic, and social progress has been great, and we must plan as well as we can for our part in the post-war period."

## April Air Conditioning Sales Set All-Time Mark For Chicago

CHICAGO—Sales of both central-plant air conditioning systems and room coolers in Chicago in April were the highest of any April in history, figures compiled by Commonwealth Edison Co. reveal.

A total of 60 central-plant installations with a combined capacity of 1,198 hp. were sold, compared with 58 aggregating 1,170 hp. reported for the former top-ranking April of 1940. Systems contracted for the month were divided as follows:

Restaurants	21
Offices	10
Bowling Alleys	5
Clothing Stores	5
Print Shops	3
Drug Stores	3
Shoe Stores	3
Funeral Homes	2
Industrial Plants	2
Bank	1
Hotel	1
Candy Store	1
Music Store	1
Theater	1
Bakery	1
<b>Total</b>	<b>60</b>

Fifty-eight electric room coolers were purchased this April as against 41 in April, 1940, and 50 in the previous record April of 1939.

## Air Conditioning Speeds Patients' Recovery In Pneumonia Cases

CARLSBAD, N. M.—More rapid improvement in pneumonia and influenza cases has been noted at Physicians & Surgeons hospital here since installation of air conditioning.

Speedy recovery in most cases was attributed by Dr. Frank H. Austin, head physician at the hospital, to the constant temperature and humidity conditions, with proper ventilation and elimination of drafts.

The air conditioning system was planned to serve the hospital's 12 rooms, the nursery, the nurses' dining room, and the hall. Windows do not open and are built with solid sashes to avoid any possibility of drafts.

According to the head nurse, individual temperature controls in each room help considerably in hospital routine, particularly when giving patients their daily baths. By adjusting the thermostat, it is possible to increase room temperature almost instantly. When the bath is over and lower temperatures are desired, all that is required is another adjustment of the thermostat to the temperature wanted.

## 6,025 Ton System For Studebaker Plant

SOUTH BEND, Ind.—Seven Carrier centrifugal machines having a combined capacity of 6,025 tons of refrigeration will be installed in the South Bend and Fort Wayne plants of Studebaker Corp., where aircraft engines and gears are manufactured.

These units will supply cooling for the machine and assembly building and an office building.

## JOE SERVICE...on the JOB!





## Cash In the Till

# Rentals Instead of Free Trials Make Conditioner Sales Easy & Profitable

By Richard F. Roper, Air Conditioning Sales Manager,  
Gale Products, Galesburg, Ill.

Ever since the small unit air conditioner first appeared on the market, manufacturers, distributors, and their salesmen have agreed that the best way to sell these comfort-cooling devices was by trial demonstrations in the prospect's own home.

But experience has shown that there are some fundamental errors in this merchandising plan. In the first place, the prospect very naturally was inclined to ask that the trial period be extended. He could not be blamed for wanting to have a nice air conditioned office as long as he could for nothing.

This situation was aggravated by the fact that the salesman, in his early enthusiasm would even go so far as to ask permission to put a unit in for a trial period. Many prospects got the idea they were doing the salesman a favor to give the unit a test, and, therefore, they felt no obligation to pay any installation or removal charge if they did not buy the merchandise.

### 'SOMETHING NEW'

Furthermore, the average person regarded the unit air conditioner as something new which had not proved itself out in practice. He was inclined to be unusually critical of an "experimental device," in which he was asked to invest a considerable sum of money. The prospect had good reasons for being critical. He did not know how long the room cooler would last, the amount of service it would require, and the expenditure he must make each year for maintenance, installation, and removal.

In analyzing this situation Gale Products came to the conclusion that a new type of selling plan must be presented which would enable the distributor and his salesmen to get the merchandise installed in the prospect's rooms at an immediate profit, and to eliminate sales resistance as much as possible until such a time as the room cooler had been in use long enough to sell its effectiveness and desirability. When you have a product that "everybody wants and nobody has" and you have not reached tremendous volume, there is nothing wrong with the product; there is something wrong with the merchandising plan.

### WRONG WAY APPROACH

Someone suggested that perhaps we were approaching this thing the wrong way. Perhaps we should not try to sell the machine—possibly we should sell the prospect only the pleasant, conditioned atmosphere created by the unit. In other words, maybe the dealer or distributor should rent the room cooler as the first step in selling it. So Gale went out with test programs in the big cities and tried such a plan.

One of the largest orders in the company's history was a city hotel which had purchased 150 units. The same hotel rented an additional 100 units for the 1941 season and now has a total of 250 room coolers in use.

Similar arrangements were made with another hotel for the rental of direct current room cooling units—taking all the distributor had in stock. Special test newspaper campaigns in key cities brought a flood of inquiries from individuals, as well as from hotel and apartment owners.

### HOW PLAN OPERATED

Here's how the plan operated: A rental contract form was drawn up for use by the distributor, stating the terms and conditions under which the merchandise would be rented to the consumer, and giving the user an "option to buy" which could be exercised at any time before the end of the rental period.

Small advertisements were inserted in leading newspapers reading, "Cool Your Bedroom. . . . Rent an Air Conditioner. . . . Telephone Main 0000." These advertisements were inserted only on the mornings following very hot days. More than 20 units were rented in one day in one city, and a large hotel leased every unit remaining in the distributor's inventory.

Rental charge in most cases was \$49.50 per unit for the balance of the

summer season—and these merchandising tests were run late last July. This rental figure represents more than half of the distributor's cost on the merchandise, even after deducting all charges for installation, service, removal, and storage of the unit ready for the following season.

Late in the summer our distributors began to contact their rental customers to call their attention to the "option to buy" clause in their contract—the contacts being made by telephone with no personal follow-up by salesmen.

Our records show that almost half of the customers purchased—pointing out that no real effort was made to close the sale.

Since these tests were made, a

careful analysis has brought out that scores of individuals were willing to pay as much as \$49.50 for an air conditioned room for a few weeks' use. The same individuals, who showed no indication to purchase when first approached, later became so sold on using a room cooler that they recognized how foolish it was not to apply the rental charge already on the purchase price.

The analysis disclosed the fact that most people were scared off when they were asked to buy something entirely unfamiliar. The term "air conditioning unit" did not convey any distinct impression—few had ever seen the latest types. They hesitated to invest as much as \$149.50 in an item they felt might become obsolete quickly, or which might have heavy service and maintenance cost.

People living in apartments wanted the machine only in summer—and had no place to store it in winter.

We found that the customer was not interested—at the start at least—in buying a piece of machinery. What the customer wanted was relief from heat—or the results that the machine would produce.

Our company makes no definite recommendations as to how the rental plan should be used, but suggests that the dealer adopt a plan that will best suit his local market conditions. The rental charge should, however, be kept high enough so that the balance due on the "option to buy" clause is as low as possible.

### RENTALS ALONE PROFITABLE

Handling room coolers on a straight rental basis can be an exceedingly profitable business, even though no sales are made, but Gale Products recommends the rental plan only as the first step in selling merchandise. Obsolescence has become a negligible factor in the room unit air conditioning business, and the dealer is safe in keeping rental units in stock. Room coolers are built to operate for many years—just as an electric refrigerator gives satisfactory service over an extended period of time.

Installation of the window type units is comparatively simple. One of our distributors has made an arrangement with a storage and transfer company for "temporary"

installations. The transfer company men lift a unit into a window, locate it securely, and fill in the additional space on either side of the window with cardboard. A layer of sound-deadening felt is placed on top of the unit and the window sash pulled down. They plug it in like a radio and turn on the current.

The room cooler can then operate until an experienced service man can reach the job and complete the installation.

Our experience shows that service on units of this type is negligible—particularly when the rental plan is in operation. Reason for this seems to be that the customer who rents something is far less critical than when he buys.

The customer has already charged up the expense to relief from heat—and is not inclined to be critical once he gets that relief.

Gale Products has found that while refrigerators, washing machines, and other appliances are a "one to a home" proposition, the sale of a room cooler in a bedroom, for example, often leads to the sale of units for other rooms in the house—and for the owner's business office.



## Fighting heat almost two miles underground . . .

### HOW AIR CONDITIONING MAKES GOLD MINING POSSIBLE DOWN NEAR EARTH'S FURNACE

IF YOU STARTED traveling straight into the earth with a thermometer, you'd find that the temperature goes up 1 or 2 degrees every 300 feet. That doesn't sound like much. But when men searching for gold get nearly 2 miles underground, they find the temperature almost unbearable—it might go up to 140°! And so air conditioning is called on to do another job—to make it possible for men to work efficiently down near earth's furnace.

Air conditioning and refrigeration have hosts of strange uses, ranging from an air conditioned phone booth in Atlanta to a refrigeration system at the Bronx Zoo, where snakes are chilled into torpor for easy handling.

The less spectacular, but more universal, uses of air conditioning and refrigeration have become almost indispensable to our existence. In making fabrics for the clothes you wear, in preparing the food you eat, in producing equipment you use every day—your automobile, camera, knife and

fork—air conditioning and refrigeration make major contributions. When precise measurements are required, for example, air conditioning prevents expansion or contraction of the materials through change in temperature.

Look around in your plant. Air conditioning is more important today than ever before. Use it to maintain the health, comfort and efficiency of your employees.

Both air conditioning and refrigeration serve you better when they employ "Freon"—safe refrigerants. Kinetic Chemicals, Inc., Tenth & Market Sts., Wilmington, Delaware.

"Freon" is Kinetic's registered trade-mark for its fluorine refrigerants.



# FREON

safe refrigerants



TO MORE THAN 800,000 readers, TIME Magazine has carried this advertisement—first of the 1941 series designed to stimulate public interest in air conditioning and refrigeration.



THIS SERIES of advertisements will help contribute to better business for you by giving the public specific, interesting facts about your fundamental markets for refrigeration—food processing and storage, transportation, industrial production, and air conditioning for human comfort and health.



AS A RESULT of long-continued advertising, "Freon" refrigerants are well-known to business men in many fields. When you use equipment employing "Freon," call it to the attention of your clients. To them it is a sign of the careful engineer or contractor.



# Here's 'Just What the Doctor Ordered' For Your Trade-In Headaches

## Display of Trade-Ins In Special Show Window Results In Rapid Turnover

### Reconditioned Units Held For Week-End Sale To Draw Patronage From Rural Shoppers

GULFPORT, Miss.—Display of trade-ins in a special show window reserved for this purpose has proved a sure-fire and profitable way of disposing of these "problem children" of the appliance business for O'Neal Electric Co., General Electric dealer here.

Every used refrigerator received in good condition is placed immediately in this window and marked "Special." It has been the store's experience that these units are sold within 24 to 48 hours after first being shown.

Refrigerators which require any amount of reconditioning are held for display on weekends, when the town is crowded with rural shoppers.

#### CONSIGNMENT BASIS

All trade-ins are taken into the store "on consignment," and are sold strictly for the owner's benefit. In other words, the store actually never accepts a trade-in, but instead sells its new merchandise at full price and then offers to sell the used box for the customer.

In this way, reports Oscar O'Neal,

the prospective purchaser receives more for his old refrigerator than the store could allow on a trade-in, there is no long term holding of used units in the store, and the store itself makes a small profit from the \$5 to \$10 charge made to the customer to cover the expense of picking up, promoting, and selling the unit.

#### MILEAGE CHARGE

This charge is based on the distance traveled to pick up the box. If the distance is 10 miles or less, the charge is \$5; if greater than 10 miles, \$10 is charged. Any expenses encountered in reconditioning the refrigerator are added to this basic charge.

The O'Neal organization has sold at least one trade-in weekly in this way for the past 12 months, Mr. O'Neal states. He figures that each deal helps the store in two important ways—the used refrigerators give the store something to offer the low-income customer, and the method of handling the trade-ins enables the store to realize full profit on the sale of each new refrigerator.

AS the market for mechanical refrigerators gradually becomes more nearly saturated and more and more replacement sales are made, the problem of "what to do with trade-ins" becomes ever more acute.

Appliance merchants of all types—from the smallest independent operator to the biggest department store—have been forced to conjure up some sort of a solution to this increasingly troublesome problem. New philosophies of replacement selling have had to be devised.

To give its readers an analytical cross-section of this new flood of dealer opinion, the NEWS is publishing on this page the first part of what might aptly be termed a "trade-in forum," wherein the operators of various types of appliance outlets voice their opinions on the most satisfactory ways of meeting with the trade-in situation.

Part two of this trade-in forum will be published in a future issue.

## Separate Shop For Trade-Ins Boosts Department Store's New Unit Sales

### Break Even On Used Units—Profit From New Appliance Sales, Is Maison-Blanche Policy

NEW ORLEANS — Department store appliance departments which are finding the pressure of trade-in handling growing more oppressive year by year may perhaps see an ideal solution to their problem in the "Trade-In-Store" which the Maison-Blanche department store has operated here for the past five years.

"Refrigerator sales reached a high percentage of saturation in New Orleans much earlier than in other cities," J. H. Eberhardt, buyer, explains, "so 50% of our sales now require a trade-in allowance of some sort."

"Even though we have one of the largest appliance sales floors in the South (10,000 square feet), we have no room for merchandising all our trade-ins in the store. And besides, we found five years ago that such a practice was having a bad effect in several ways on sales of new merchandise.

#### UNWISE MIXTURE

"The prospect who sees a box in the trade-in department for \$60 less than the lowest-priced new model is bound to be hesitant about buying the latter. Consequently, the used-appliance section was pulling down new refrigerator sales daily. Worse yet was the fact that the department's reputation was suffering from the variety of used merchandise on view."

"We felt that the practice of showing both new and used appliances together was bad from every standpoint, and so we eliminated it completely."

Since 1935, the Maison-Blanche store, which last year established an all-time record of selling 1,200 new Frigidaires, has sold all trade-in appliances in a separate store three blocks away. Used refrigerators are handled here as if entirely separate from the rest of the store, and go through a separate merchandising program which has had one outstanding result—the Maison-Blanche appliance department has averaged less than \$1 loss per trade-in on each sale for five consecutive years.

#### APPRAISALS IMPORTANT

This record has been made possible by a thorough reconditioning program, and use of the appraisal methods in force in the new-appliance department.

Before a trade-in goes to the trade-in store, it must be accurately appraised and the correct allowance must be given to the customer. The seven regular refrigerator salesmen of the store are trained specifically for this appraisal work as an integral part of their job.

Points necessary for consideration are size, condition of the refrigerating unit, and the interior. Exterior appearance does not matter, for this can be inexpensively refinished. Boxes are appraised for two classifications: "as is" units sold as they are received, and those which can be reconditioned and sold at a much better price.

#### SECOND CHECKUP

Boxes accepted go immediately from the prospect's home to the used-appliance store, where they are placed in a convenient stock-room for a second appraisal—this time by Mr. Eberhardt. Visiting the store once a week Mr. Eberhardt sets a retail value on each unit—and makes a ruling on how much reconditioning will be allowed for each. This allowance is usually \$10 to \$15, and never more than \$20.

Reconditioning is handled in two ways. Better boxes are sent to the local distributor, where units are completely torn down, new parts added, and a complete refinishing job done.

In some instances, units are transferred from one box to another, thus enabling the store to make one good saleable refrigerator from two otherwise valueless models. Paint costs average \$4, unit repair \$7, and new gaskets, motor belt, and unit mounts \$3.

Refrigerators which require only a tuneup or smaller amounts of reconditioning for the "as is" classification are handled under contract by several small refrigeration service firms which can promise one-day service on each unit. Expense here is chiefly for new gaskets, woodwork replacement, and addition of refrigerant.

#### USED UNIT PRICES

As Maison-Blanche is content to profit from the sale of new refrigerators, and to break even on the trade-in deals, reconditioning cost is charged as direct expense to the trade-in store and the selling price of each unit is set independently. Average price for 4 to 6-cu. ft. models is \$50. Prices range up to \$69.50 for larger, newer models. Ice boxes, many of which are received, bring about \$18. All trade-ins sell at approximately the allowance figure plus the price of reconditioning, and a small extra amount for merchandising expense.

#### ADVERTISING COST CUT

Advertising cost is kept to a minimum through the fact that only one newspaper display advertisement is run every 45 days. The larger advertisement size is used on the theory that the effect of small-space advertising is lost because scores of similar advertisements submerge it. Word-of-mouth circulates news of the trade-in store most effectively.

The trade-in store last year turned over 444 units, compared with the new appliance department's mark of 780 new refrigerators. Reconditioning, advertising, and store operation cost came within a few dollars of the total revenue brought in, but Maison-Blanche was thus able to realize full profit on every one of the 780 units sold from the new-appliance department.



## An Explanation and Apology

The demands made upon us for the current National Defense Program for much of our type of equipment, plus the difficulties in obtaining raw materials from outside sources of supply, have made our deliveries and service much below our customary standards.

Government priorities must be and have been respected. Civilian and non-defense orders have of necessity suffered. With this explanation as to cause, we offer our apologies for whatever inconveniences and disappointments that have resulted or which may result in the future.

Our new plant facilities, (illustrated below) now being built and within sight of completion, will do much to relieve the present circumstances. We are glad that we shall shortly again be able to render the kind of service that has made these increased facilities necessary. Meanwhile, we respectfully ask your indulgence and forbearance.



## MARLO COIL COMPANY

6135 Manchester Ave., St. Louis, Mo.  
Refrigerating Equipment Manufacturers

OF A SERIES OF ADVERTISEMENTS  
DESIGNED TO HELP YOU SELL  
REFRIGERATORS FASTER

## KNOW YOUR TRAYS AND LATCHES!



### Cash-in on the "sales-pull" of the extra conveniences and gadgets on your unit

MANY a prospect is led to sign-on-the-dotted-line by an easy-working door latch or an ingenious ice cube remover. These and other gadgets often help to close a sale because they arouse a woman's curiosity and interest.

So, too, you can arouse a customer's interest and speed your sale by pointing out the advantages of a Du Pont DULUX finish.

If there's anything a housewife wants, it's a sparkling white finish that stays white with a minimum of care. And that's what she gets with Du Pont DULUX. Today this finish is so popular with women that the majority of refrigerators have a DULUX finish.

DULUX has every quality women want—sparkling whiteness... resistance to chipping, cracking, food and grease stains... ease of cleaning. Women know DULUX offers extra quality because it's made by Du Pont. And what woman's eyes wouldn't brighten up at a finish that lightens her housework?

Point out the DULUX finish early in every sales talk. It's the finish your prospects want! E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

### VALUABLE SALES HELP IN THIS FREE BOOK!

► This book is helping many dealers to more profits. Write for your copy of "How DULUX Has Helped in the Sale of More Than 9,000,000 Refrigerators." Send to Du Pont, Room 715 G, Du Pont Bldg., Wilmington, Delaware.



# DULUX



THE MODERN FINISH FOR MODERN LIVING...It saves work



## Omaha Dealers Cooperate To Meet Competition of Municipal Utility

OMAHA, Neb.—Sales of electric refrigerators have been boosted by the cooperative advertising and promotion efforts of dealers here who joined forces to meet the competition of the municipally owned Metropolitan Utilities District, retailer of gas refrigerators.

Small "teaser" advertisements picturing one of the famous "no-evil" monkeys were inserted in the local paper for a week to open the campaign in May.

Following this, a page-long, three-column advertisement captioned, "Take it from the 'No-Evil' Monkey . . ." appeared. The "hear-no-evil" monkey was shown holding a small electric refrigerator up to his ear and saying, "It's quiet." "See-no-evil" said, "It's cleanest." "Feel-no-evil" exclaimed, "It's heatless." "Do-no-evil" pointed out, "It's safest." And "No-evil" averred, "It's cheapest."

No dealer names were mentioned in the advertisement, the customer merely being advised to "See your electric refrigerator dealer."

Cooperating dealers offered free monkey masks to children, provided they came to the store accompanied by their parents. Window and store placards carried out the theme of the promotion.

## G-E Opens New Office In Wilmington

WILMINGTON, Del.—Open house attended by 300 General Electric dealers and representatives of contracting and industrial firms marked the recent opening of G-E Supply Corp.'s new offices and warehouse here, which will distribute appliances in Delaware, the eastern shore of Maryland, and in Chester county, Pa.

First floor of the remodeled building houses operating offices, supply and parts departments, and a warehouse for pipe and cable. Second floor contains display rooms, executive offices, and additional warehouse space. Third floor has a 90 x 40 foot storage space with high ceiling. Alterations have provided railroad and truck loading facilities.

Sample units of the latest G-E fluorescent units supply lighting throughout the building. Including major appliances, more than 5,000 items are carried in stock for wholesale distribution.

Headed by E. E. Colladay, manager, executive personnel includes: C. I. Disney, industrial and electrical contracting supply manager; L. P. Field, service manager; H. R. Keefer, credit manager; and W. E. Snouffer, product service manager.

## Dealers' March Sales Up 22%, Gov't Reports

WASHINGTON, D. C.—Sales by 277 household appliance dealers reporting to the Bureau of the Census, Department of Commerce, for March amounted to \$1,834,895, an increase of 22% over the same month of 1940 and a gain of 31% over sales in February, the preceding month.

For the first three months of this year, sales by reporting appliance dealers were up 15% over those for the corresponding 1940 period.

Sales by 23,606 retailers of all types reporting to the Census Bureau totaled \$257,599,284 during March, an increase of 10% over the same month of 1940, and a gain of 12% for the three-months period over last year.

Sales by 351 wholesalers of electrical goods (including appliances) reported to the Census Bureau for March amounted to \$34,332,000, an increase of 23% over those for the same month of 1940, and a gain of 13% over February of this year. Inventories reported by 306 firms totaled \$32,001,000, an increase of 27% over the March, 1940 figure, and a gain of 10% over that for the preceding month of 1941.

## Sorensen-Hirsig Named Dealer For G-E

CHEYENNE, Wyo. — Sorensen-Hirsig Hardware Co. has been appointed General Electric dealer here.

## Crosley Campaign Nets 1,362 New Retailers

CINCINNATI — A recent six-weeks' dealer-getting drive by Crosley wholesale men lined up 1,362 new retailers on the company's 1941 refrigerator line, reports L. Martin Krautter, Crosley advertising and sales promotion manager.

The promotion was one of a series designed to obtain for Crosley refrigerators a better quality of dealer representation in every trading area, Mr. Krautter said. Special awards were made to wholesale men who made the best records during the drive.

## Drug Store Adds Story To Display Appliances

GURDON, Ark.—Second story for displaying home appliances has been added to the building of Milburn's Drug Store.

## Utility Promotion Aids Dealers In Boosting Sales 25% Over '40

CASPER, Wyo.—Refrigerator sales in this area to date are 25% ahead of 1940, and dealers credit part of this increase to the "economy" promotion conducted by Mountain States Power Co.

In newspaper advertisements the utility compares first and operating costs of modern refrigerators with those of 1930. Local records show, the copy states, that an up-to-date refrigerator uses 20 kwh. a month, costing 60 cents. The 1930 model required 50 kwh., or \$1.80 worth of power. A 6-foot model today averages \$129.50, while 11 years ago the purchaser had to pay \$285.50 for a similar 6-foot unit, the promotion emphasizes.

Dealers tie in with the promotion by using window displays and advertisements on the same theme, and by talking "economy" to prospects.

## \$26,800 Contract Goes To Ga. Refrigerating

ST. CLOUD, Minn.—Georgia Refrigerating Co., Atlanta, Ga., was low bidder with \$26,800 for the installation of refrigeration equipment at the Veterans Administration Facility here.

## Kitchen Party Draws 500 To Store Opening

SEARCY, Ark.—With a kitchen party as the main event, the new store of D. T. Williams Plumbing & Electric Co. attracted nearly 500 people at its opening. Some 75 electrical gifts were distributed.

## Meadows Adds Display Room

HINTON, Va.—Meadows Furniture Co. has expanded its electrical department by adding a new display room exclusively for appliances.

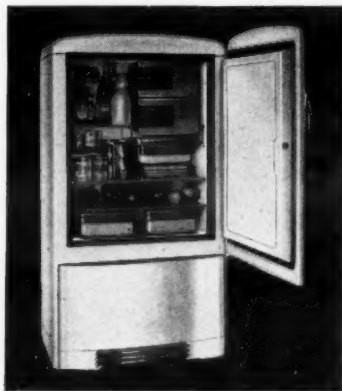
## Buffalo Dept. Stores Have 24% Sales Rise

BUFFALO — Sharp increases in sales of electric refrigerators, ranges, and other appliances accounted for most of the 24% rise in Buffalo department store sales during the first week in May compared with the corresponding week a year ago, store executives reported.

April department store sales in Buffalo were 27% greater than a year ago and for the first four months the increase was 22%, the Federal Reserve Bank of New York reported.

## Merriam Moves Headquarters To New Location

SCHENECTADY, N. Y. — Headquarters of A. Wayne Merriam, Inc., General Electric distributor, were moved June 1 from 136 Erie Blvd. to a new location on Maplewood Ave. Extension, Stop 39 Schenectady Rd.



Production of Gale refrigerators has been increased again. The factory is working day and night. Finely built, beautifully finished, thoroughly tested Gales come off the production lines in constantly moving, unending streams.

And yet, in spite of this, the big Gale warehouse is strangely empty. Freight cars and trucks stand ready at the loading platforms to whisk these refrigerators away to foresighted dealers who are determined to take full advantage of this year's selling opportunities.

We are proud of the fact that Gale dealers are receiving the merchandise they need. We are gratified that Gale dealers are making money on the Gale line because they have refrigerators to *deliver* as sales are made.

Frankly, this is the result of long hours, hard work, careful planning and coordination on the part of Gale executives and employees. It has been the result, too, of fine cooperation on the part of Gale dealers everywhere in anticipating their needs and in letting us know what those needs would be, in time for us to procure materials and plan production.

For our part, we pledge ourselves to keep up the hard work and long hours — to work harder and longer if need be. And we urge you, as a present or prospective Gale dealer, to insure your profits and protect your position *throughout this refrigerator season by looking forward — by ordering your Gales NOW.*



# GALE PRODUCTS

Refrigeration Division: Outboard, Marine & Mfg. Co.  
GALESBURG, ILLINOIS

Here's a source of added sales and extra profits. GALE Portable Air Conditioning Units provide true air conditioning at low cost. Write for facts.

GALE Products  
1635 Monmouth Blvd.  
Galesburg, Illinois

Gentlemen:

Please send full information on:

Gale Electric Refrigerators . . . . . ☐  
Gale Portable Air Conditioning Units . . . . . ☐

NAME

ADDRESS

CITY

STATE



## A.S.R.E.'s Enlarged Technical Committee Maps Studies In Commercial Field

CINCINNATI — Several months ago it appeared that the area of the refrigeration industry covered by the field of commercial refrigeration was not adequately represented in the technical committee organization of the American Society of Refrigerating Engineers, and to remedy this situation this committee has been organized during the last few months.

The membership includes engineers of wide refrigeration experience, who are at present primarily interested in commercial refrigeration. These members are: R. U. Berry, General Electric Co.; F. E. Dennison, York Corp.; Lars Hanson, Carrier Corp.; E. T. Williams, consulting engineer; W. W. Higham, Universal Cooler Corp.; D. D. Wile, Kellogg Mfg. Co.; V. W. Smith, Peerless of America, Inc.; and R. H. Tull, Westinghouse Electric & Mfg. Co. Mr. Tull is chairman of the committee.

In preliminary correspondence with the chairman the members have suggested several subjects for committee consideration, Mr. Tull reports. These are listed below and formed the agenda for the first meeting.

### DISCUSSION TOPICS

1. Consideration of standard methods of testing unit coolers.
2. Consideration of standard methods of rating heat exchangers.
3. Study of pressure drop through direct expansion evaporator coils.
4. Study of oil circulation in refrigerating system.
5. Discussion of motor loadings in refrigeration applications.
6. Discussion of moisture in refrigeration systems.

"We realize, of course, that there are no quick answers to these problems, but we may be able to bring such problems into the focus of attention of individuals or groups who can contribute to their solution," Mr. Tull declared.

"It is one responsibility of an A.S.R.E. technical committee to keep the society advised regarding significant trends appearing in the indus-

try. Changes in design and application have been especially marked in the commercial refrigeration field in recent years. These changes indicate still further changes in manufacture, application, distribution, and service of commercial equipment.

"In recent months in the small condensing unit field there has been a move toward hermetically sealed compressors involving all the major manufacturers," Mr. Tull continued. "Appearing first in ice cream dispensing cabinets, these new units are now being used in water coolers and beverage coolers and will doubtless soon find wider and wider applications.

### HERMETICS POPULAR

"In a relatively short period the number of manufacturers of hermetic units for commercial use has jumped from one to at least seven. These compressors include both rotary and reciprocating pumps. They are designed with horizontal and vertical shafts and are built in sizes from 1/10 hp. to 3/4 hp. Even larger sizes are built by some manufacturers extending up to 100 tons. Some of the new compressors are sealed in steel shells and others are of a bolted design permitting some service operations in the field. With these units we can reasonably expect the longer guarantee or warranty period that accompanies the domestic hermetic unit.

"It is expected that this swing to hermetic units by most unit manufacturers will add impetus to a trend toward self-contained or so-called packaged commercial equipment. Some manufacturers are now offering complete lines of self-contained equipment, including reach-in cabinets, display cases, wet and dry storage beverage coolers, ice cream cabinets, milk coolers, and draft beer coolers. This equipment is completely assembled and tested at the factory and can be plugged in on installation like any other appliance. This trend may have far reaching effect on sales, distribution, and service plans for the future.

## Air Conditioning In Limelight (the Real McCoy)



Entire cast surrounds President J. I. Lyle for the final number, "We All Belong," one of the hit tunes of "It's Always Fair Weather," first musical revue with an air conditioning theme, presented by Carrier employees at the Civic theater in Syracuse. It drew packed houses for the three performances.

## Carrier Employees Stage Own Musical Comedy To Portray Benefits of Air Conditioning

SYRACUSE, N. Y.—For three evenings at the Civic theater here, employees of Carrier Corp. made their appearance in "It's Always Fair Weather," an informative production veiled as a musical comedy to show the interdependence of Carrier and Carrier workers, as well as an exposition of air conditioning's boon to modern living and of the company's contribution to national defense.

"Fair Weather" has all the ingredients needed to make a successful musical: catchy tunes, fine entertainment, good dancing, appealing settings and costumes, and true to life romance between a charming, ingenious couple. Where many "purpose plays" fall short, "Fair Weather" points its moral amusingly and, so, convincingly.

Honors in the fast moving show are well distributed among a talented and well-trained cast of 50 Carrier employees. The leads are played by Carol Anderson and Frank Booth, who portray Mary and John, two Carrier love birds. Around their serious kind of inquisitive romance is woven the play's pattern of continuity.

### THE QUESTIONS

"What," Mary and John want to know, "does our company make? Who owns it? What is our place, and the place of our fellow workers in it? What is the social significance of air conditioning?" These and other wonderments are resolved by song, dance, and skit, and by the off-stage interpolations of a radio commentator.

Air conditioning, the voice informs them, improves working conditions in industries other than their own. It makes industrial production easier, more efficient. Thus air conditioning lowers the prices on industrial products which John, Mary, and other Carrier workers buy and enjoy.

The performance gets underway with high tempoed musical sequences which burlesque the discomforts of early twentieth century life, which—among other things—was innocent of air conditioning. Then sharply etched historical tableaux show the pioneering of Dr. Willis H. Carrier along the air conditioning trail. Following scenes lay emphasis on the benefits brought by the corporation to modern living, eating, dressing, working, scientific research, industry, and national defense.

At this point the commentator

explains how the manufacture of defense materials often demands precise control of conditions of heat and humidity. This theme reaches a dramatic pitch with the end of Act I. Here the assembled cast is costumed to represent the various employee functions in the air conditioning industry. Alternately, their faces are lighted by hand torches, then blacked out. Their voices snap the staccato chant of "Speed! Speed! Precision! Speed! Carrier does its part."

### PRODUCTION HEADS

Assisted by Gordon Alderman, John Moe, Joyce Crabtree, and Elizabeth Cole, "It's Always Fair Weather" was written and produced by Sawyer Falk of Syracuse university. All skits and musical compositions are original. In one of the latter, "I Didn't Know When It Happened," the show simultaneously reaches its romantic highpoint.

Carrier's unique experiment with the dramatic art as a means of acquainting employees and their families with the organization and operation of their company may well prove an "Open sesame" to other industrial concerns seeking a diverting expression of company policies.

## Steam Jet Unit To Cool University Library

LINCOLN, Neb.—A steam jet vacuum cooling unit will be used in connection with the air conditioning system for the new \$800,000 library building on the University of Nebraska campus here. Contract for the refrigerating mechanism was awarded to the Westinghouse Electric & Mfg. Co. on a bid of \$36,765. Contract for an induced draft cooling tower to be erected on the library building was awarded to the Passol Engineering Co. of Omaha on a bid of \$18,635. The tower will handle 4,500 gallons of water per minute.

## Natkin Awarded Contract For Veterans Bldg.

MUSKOGEE, Okla.—Contract for installing an air conditioning and ventilating system in the Veterans Administration building here has been awarded to Natkin & Co., 1800 Baltimore Ave., Kansas City, Mo.

## NO SERVICEMAN CAN AFFORD TO BE WITHOUT THIS HOT-WEATHER PROFIT-MAKER



Compact—Durable—Easy to Handle

Get the Dayton V-Belt Service Kit for "on the job" V-Belt replacement service and save call-backs, delays and customer squawks. Easy to handle, this compact, durable Swedish Fibre case contains an



Open on the Job—43 Belts at Your Finger Tips

assortment of 43 fractional horsepower V-Belts at your finger tips plus a handy V-Belt Matchometer. Here's the portable, profitable answer to "on the job" V-Belt replacements for all leading makes of automatic refrigerators including Frigidaire, General Electric, Kelvinator, Norge, Westinghouse and others. Costs only \$23.48 and pays for itself out of gas and oil savings.

ASK YOUR DISTRIBUTOR FOR DETAILS OR WRITE TO  
THE DAYTON RUBBER MANUFACTURING COMPANY, DAYTON, OHIO  
WORLD'S LARGEST MAKERS OF V-BELTS

## ON GUARD... ANSUL RESEARCH



Ansul has long been proud of its Research Department, proud of the exacting way in which it has stood guard over the quality of Ansul products.

But Ansul research men have done more than that—they have constantly sought to make Ansul products better, to check fully into the performance of these products, and to give technical aid and information to Ansul customers, and to the whole industry as well.

### SEVEN ORIGINAL ANSUL RESEARCH PAPERS AVAILABLE ON REQUEST

- Corrosion of aluminum with methyl chloride
- Refrigerant driers
- Corrosion of metals by wet refrigerants
- Separation of wax from oil-refrigerant mixtures
- Methyl alcohol in refrigerating machines
- Pressure drop in suction and liquid lines
- Sludges

ANSUL CHEMICAL COMPANY  
MARINETTE, WIS. AC-42

**ANSUL**  
SULPHUR DIOXIDE • ICE-X • METHYL CHLORIDE  
AGENTS FOR  
KINETICS "FREON-12"  
LET THE ANSUL JOBBER NEAR YOU SERVE YOU BETTER



## New Supply Jobber Firm Organized In Dallas By Moxham

DALLAS, Tex.—Organization of a new refrigeration jobbing company here, to be known as Gulf Supply Co., has been announced by Frank B. Moxham, who will act as treasurer of the company. Mr. Moxham also will continue to be associated with Southwest Paint & Chemical Co. The company has taken office and warehouse space at 1801 Young St., in downtown Dallas. In effecting its organization, Gulf Supply Co. has absorbed the L & S Supply Co. of Fort Worth with the latter acting as a branch outlet in Fort Worth.

Howard Lee, formerly head of the L & S company, is president of the new jobbing firm, and J. R. Sparkman, formerly associated with Electromotive Corp. here, is vice president. Under present plans, Mr. Lee will continue in active charge of the Fort Worth branch, while Mr. Sparkman will manage the operations in Dallas.

Present operations of the company here are confined to the city of Dallas itself, but plans are under way to increase the sales staff and extend coverage to the entire Dallas trading area.

## Machine Shop Is Sold By Interstate Machinery

OMAHA, Neb.—Machine shop of Interstate Machinery & Supply Co. has been sold to Paxton-Mitchell Co., operator of a foundry and machine shop. The Interstate company, which manufactures refrigeration supplies and filtering supplies, will continue its refrigeration activities at its main plant, 1006 Douglas St.

## Close Attention Given To Air Movement In Blower Unit System For Wholesale Florist

BARBERTON, Ohio — Selection and placement of cooling units, important considerations in successful cooling of flowers in the wholesale florist establishment, have been worked out in the installation made by the Dan F. Willis Co., Akron, for Yoder Bros. here.

Five Carrier 15M4 cold diffusers serve the storage rooms, three being used in the larger room and one each in the two smaller ones, with the entire system being served by two inter-connected 3 hp. condensing units.

Near-freezing temperatures and high relative humidities must be maintained in the rooms for best results, and at the same time air movement must be low enough not to interfere with proper development

of the buds in storage.

In the largest of the three rooms, 17 x 39 feet, a temperature of 40° is maintained. The same temperature also is maintained in one of the other rooms, 10 x 14 feet. In the smallest room, 10 x 8 feet, used for storage of ferns and similar plants, a temperature of 34° is required. In all rooms, humidity is kept between 85 and 88%.

In all of the rooms, air is introduced by locating the diffuser in the center of the longest wall, to effect air movement in the largest possible area with minimum perceptible air motion. Air movement in the rooms in the Yoder plant is about 90 c.f.m., Willis engineers say, and could be somewhat higher without ill effects on the plants.

In retail florist coolers, however, where the flowers are more matured, air movement should be held to at least 40 c.f.m. for best results.

## Frosted Food Cabinets Have Pull-Out Units

CHICAGO—New models of Bastian-Blessing Co.'s frosted food retailing cabinets are equipped with pull-out compressors and have a 3-inch recessed base to provide toe space and air for the compressor.

An open louver at one end is eliminated by the new air supply method, permitting the cabinet to be placed close-up between other equipment if desired.

Facings of the cabinet are finished in white baked enamel. Top is one-piece stainless steel. Lids are full opening. Interior is furnished with wire trays and baskets for storage of both standard and odd-size packages.

Illuminated "merchandise board" holds colored posters of fresh frozen foods and a price list of the cabinet's contents. The board is the same on both sides.

## Ruegg Sues Utility For Damages From Blast

LINCOLN, Neb.—Damages totaling \$7,650 are sought in a suit against Iowa-Nebraska Light & Power Co. filed in district court here by Carl S. Ruegg, manager of Ruegg Refrigeration Supply Co., 245 S. 11th St., which was damaged by an explosion Jan. 25.

One employee was killed by the blast, caused by gas seeping from the utility's main, it is charged.

Mr. Ruegg asks \$3,650 for stock destroyed in the explosion and \$4,000 for alleged loss of business, while repairs were being made.

Earlier a \$14,000 damage suit had been filed against Mr. Ruegg and the utility by the widow of the man who was killed.

## Terry Tells Boston Group of Unusual Liquid Cooling Jobs

BOSTON—Unusual installations of liquid coolers, and how such applications can bring added business and profit to the refrigeration engineer were described by C. E. Terry of Temprite Products Corp. at a recent meeting of the Boston chapter, Refrigeration Service Engineers Society, held in the Walker Memorial building.

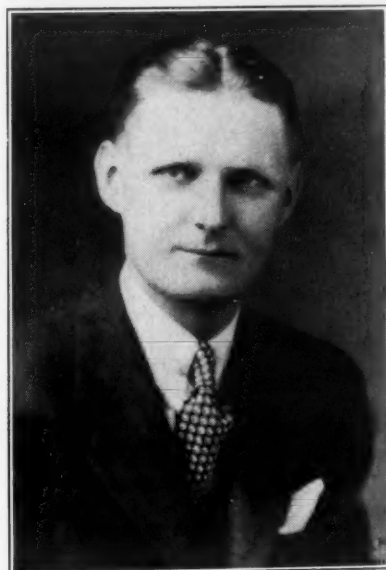
At the Ford factories, Mr. Terry said, Temprite coolers cool the plastic which is placed between sheets of plate glass to form safety glass for automobiles.

Temperature control of developing solutions and wash water used in photography and X-ray work is provided by these coolers in several installations, Mr. Terry told the engineers. Small bakeries which cannot afford the more elaborate cooling systems find these smaller units adequate, he said.

Another important application mentioned was that of cooling syrups for soft drinks. When hot syrups are run into carbonated water, they drive the gas out, making the drink flat. Cooling the syrup gradually so it will flow in freely but is not hot enough to drive out the gas keeps the drink lively.

One trick installation described by Mr. Terry was that of one water cooler which served three floors of a building. The cooler was placed on the middle floor. Connected to this cooler by 1/4-inch copper tubing were two dummy coolers on the first and third floors which had the same appearance as the genuine cooler doing the work. This type of installation, Mr. Terry pointed out, is limited by water pressure available.

## Halberg To Represent McQuay In N. Y. Area



O. H. HALBERG

NEW YORK CITY—O. H. "Dick" Halberg has been appointed McQuay, Inc. representative for New York City, Brooklyn, Staten Island, and the Long Island areas.

Mr. Halberg, before becoming associated with McQuay, was representative for Trane Co. for 11 years in New York City, Brooklyn, Long Island, and Staten Island territory. Prior to that time he was associated with A. F. Hinricksen, Inc., and Warren Webster Co.

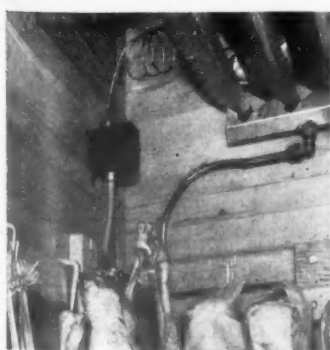
## John Mitchell Changes Name of Firm

WATERLOO, Iowa—Mitchell Air Conditioning is the new name of Air Conditioning & Refrigeration Systems. The firm has been moved from 202 Waterloo building to 511 Bluff St. John Mitchell owns the firm.

# You can give your customers this new kind of box control



Picture of a satisfied AVRGAIRE user—Samuel McCalden, Butcher at the Kroger Grocery.



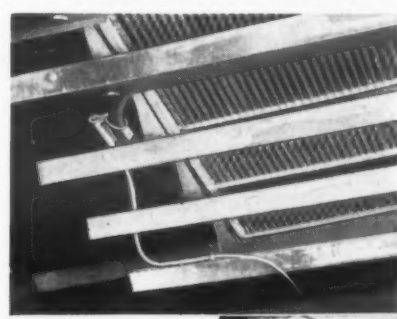
The Kroger Grocery installation at 7552 Cottage Grove Avenue, Chicago, proves the ability of the Type 260T15 on a multiple system, operating a gravity walk-in cooler and a display case on one compressor.

Left, AVRGAIRE installation in the Kroger walk-in box. Simple, isn't it? Right, display case maintained by the same compressor.



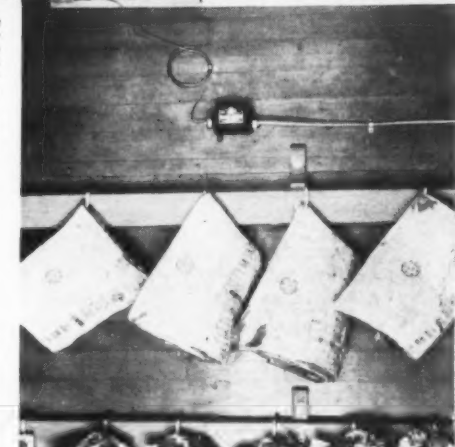
Above, modern Jewel Food Store at 1041 Third Street, Chicago, where a Penn AVRGAIRE Control is providing more than satisfactory walk-in box control.

Right, Carl Strizenberger, market manager, another user who is both surprised and pleased with AVRGAIRE Control.



Left, close-up of evaporator coil in Jewel Food Store, showing AVRGAIRE bulb installation on first return bend of coil, with portion of bulb in downstream of air from coil. Installation by R. Cooper, Jr.

Right, here is the Type 260T15 AVRGAIRE Control in the Jewel walk-in box. Control case location is not important—makes wiring and installation easy.



● Here's the kind of above-freezing control that users have been wanting for years. It's the new Penn AVRGAIRE Control. So simple in design... so simple to install that you'll wonder why no one has thought of it before. And, because it is so simple, it is available at popular prices in Type 265T15 for jobs to 1/2 HP; the Type 260T15 for jobs to 1 HP, and the Type 713T15 for single or polyphase jobs to 2 HP.

These new Penn AVRGAIRE Controls give entirely new results—results that you won't believe until you have tried one of these units yourself. First, they maintain box temperature within 2° without short-cycling the compressor. Second, they provide selective defrost—automatic coil defrosting when the box load is normal... no defrosting when the box is loaded with warm produce and extra cooling capacity is needed. Third, because they maintain a uniform spread between coil temperature and air temperature, humidity is accurately controlled to prevent sliming or freezer burning.

This is all done with a newly designed single temperature bulb and a new idea in bulb application (see "Easiest to Install" below). Pick your toughest walk-in box or display case job and install a Penn AVRGAIRE Control. Results—

listen; you'll be surprised and your customer will think you are a magician.

And we're not promising theoretical or guesswork results. For, while AVRGAIRE Controls are new to the refrigeration industry, they have been tested and tried by hard-boiled service engineers and users on scores of above-freezing jobs of all types. Ask your refrigeration accessories jobber for Penn AVRGAIRE Controls, or write for detailed information.

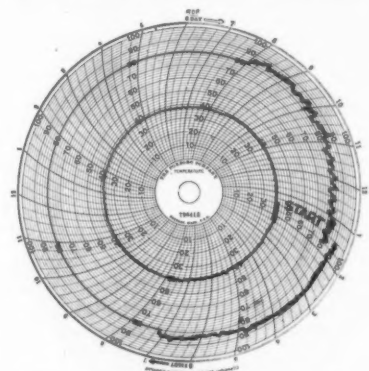
Penn Electric Switch Co., Goshen, Indiana. In Canada: Powerlite Devices, Ltd., Penn Electric Switch Division, Toronto, Ont. Export: 100 Varick St., New York City. Branches, representatives and distributors in all principal cities.

## What is AVRGAIRE Control?

Penn AVRGAIRE Controls are so-named because of two reasons. First, these new controls maintain a uniform or average air temperature within 2° as selected by the installation man and the user. Second, they operate from an average of coil and air temperature.

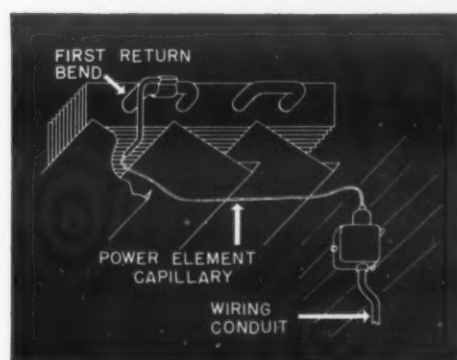
Actually, this second feature provides "cold anticipation"—on the compressor running cycle the effect on air temperature of a rapidly cooling coil is measured and the compressor is stopped before air temperature changes more than a fraction of a degree. During the "off" period, air temperature, always above coil temperature, starts the compressor as soon as the coil temperature rises to the point where it will not take care of the cooling load. This provides selective defrost and unusually close temperature control.

## Is it Results you want?



Actual charts of temperature and humidity control in the Kroger Store installation. Inside chart represents temperature in degrees F. Outside chart represents percent relative humidity. Penn AVRGAIRE will give your customers this kind of temperature and humidity regulation, plus selective defrost.

## Easiest to Install!



# PENN AVRGAIRE



# Air Conditioning & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;  
Established 1926 and registered as  
Electric Refrigeration News

F. M. COCKRELL, Founder

Published Every Wednesday by  
BUSINESS NEWS PUBLISHING CO.  
5229 Cass Ave., Detroit, Mich.  
Telephone Columbia 4242

Subscription Rates  
U. S. and Possessions, Canada, and all countries  
in the Pan-American Postal Union: \$4.00 per year;  
2 years for \$7.00. All other foreign countries: \$6.00  
per year. Single copy price, 20 cents. Ten or  
more copies, 15 cents each; 50 or more copies,  
10 cents each. Send remittance with order.

GEORGE F. TAUBENECK,  
Editor and Publisher

PHIL B. REDEKER, Managing Editor  
THEODORE T. QUINN, Assistant Editor  
Editorial Staff: JIM McCALLUM,  
HENRY KNOWLTON, and C. D. MERICLE

JOHN R. ADAMS, Business Manager  
JAMES B. SMITH, Advertising Manager  
ED HENDERSON, Circulation Manager  
M. HELEN COCKRELL, Credit Manager

On leave of absence for military  
service: RICHARD J. NEUMANN

Member, Associated Business Papers  
Member, Audit Bureau of Circulations

VOLUME 33, No. 6, SERIAL NO. 638  
JUNE 11, 1941

Copyright, 1941, Business News Publishing Co.

## Disturbing the Ivy

ALMOST as dependable as death and taxes, the conservative dignity of the American Society of Refrigerating Engineers has been a comfort to most of us for lo these many years.

From the bewildering and distracting antics of a world gone mad—from strikes and Communism, C.I.O. and New Deal, Hitler and bombers, undistributed profits taxes and the Wage-Hour Act—many of us could find surcease and solace in the orderly procedure of a learned society which annually selected its president four years before he was scheduled to take office.

No question about it, the Society has done a fine work. Above all, it has contributed to standardization, both of equipment design and municipal installation requirements.

It has also presented, twice a year, a review of technical progress in the industry—such review consisting of a chaste and anaesthetic discussion of certain topics by qualified experts in previously approved "papers," which have been distinguished almost as much by their lethal titles as by their genuine expository merit.

### ACTIVITIES CENTERED IN NEW YORK

Activities—and control—of the Society centered largely in and around New York. To be true, a bone was tossed now and then to the Faithful Few from Chicago and Detroit. But in general, a group of highly distinguished Eastern gentlemen saw to it that the status remained quo.

But now, suddenly, a revolution appears to have been taking place within the Hallowed Walls. This revolution, the forces of which have been gathering quietly for almost two years, may go so far as to change the entire character of the Society.

Its minimum result will be to move the center of gravity West, and to open up the membership rolls to a large number of men who could not qualify as "engineers" under definitions of the word which were current when the Society was established, over a quarter of a century ago.

Germes of this revolt were planted at the spring meeting in Hershey, Pa. back in 1939, when a group of midwestern engineers present decided that they were being left out of things.

To these men, the semi-annual meetings consisted invariably of golf in the afternoon, poker at night, polite conversation at meal-times, and slumber in the mornings (either in bed or in their chairs at the sessions). Somebody, somewhere, they were vaguely aware, was making decisions, setting policy, and electing officers for the Society all this while. Usually they learned what had happened after they returned home and picked up their copy of the NEWS.

These heretics all came from the "small machine industry" (household and commercial refrigeration), which wasn't in existence when the society was founded. Realizing their numbers, for the first time they became class conscious.

### CHARLEY LOGAN IS THE ORGANIZER

Every revolution requires an organizer, a fuehrer, however, and this one was stirred by a very remarkable fellow by the name of Charley Logan, a field salesman with a superb knack of making friends and influencing people. Charley has been the revolution's John the Baptist, Paul Revere, Lenin, and Joan of Arc, all rolled into one.

To Charley was revealed a vision, an Utopic society which would become the Central Committee, the Brains Trust, for the entire refrigeration industry. It was to envelop manufacturer and jobber, designing engineer and service man, production chief and purchasing agent.

Therein, warmed in the benign embrace of a fondly paternal society, all of the problems of a vast and sprawling industry noted for the ge-hawing of its diverse pressure groups could be solved through good fellowship and mutual understanding.

It was—and is—a beautiful vision. What's more, its promulgation played into the hands of the brash Westerners who had been muttering about "wresting control from the Eastern big machine crowd."

### NEW MEMBERS ENROLLED RAPIDLY

So, with a rapidity bewildering and almost paralyzing to the Old Settlers in the society, new members and new chapters were enrolled.

Intoxicated by their success, the organizers added so many members (mostly of the "associate" variety) that the Council is now seriously trying to decide whether or not to limit new "associate" members to a certain percentage of the total.

Whether the vision of an all-embracing "American Society of Refrigeration" (as Otto Klopsch, one of the ringleaders, has named it) will come true, or whether it will go the way of the League of Nations, remains to be seen.

In any event, the next year or two is likely to be an exciting one for the A.S.R.E. Despite approval of the democratization of the A.S.R.E., however, many of us will feel nostalgia for the sedate charm, the gracious adagio rhythm of the old Society, when its movements could be predicted years in advance, and all according to Roberts' Rules of Order.

To many of us, it will remain the Old South of our experience.

## They'll Do It Every Time . . . . . By Jimmie Hatlo



## LETTERS

### SEEKS SOURCE OF VIBRATION ELIMINATORS

Enochs Sales Co.  
705 Camp St.  
New Orleans, La.

Editor:

Can you advise us the address of the Vibration Eliminator Co.? If you will favor us with this information we will appreciate it greatly.

IDDO W. LAMPTON

Answer: We do not have a record of a company by the name of "Vibration Eliminator Co." However, there are several companies which make a flexible metal tubing vibration eliminator. These are: American Brass Co., Waterbury, Conn.; Chicago Metal Hose Corp., 1315 S. Third Ave., Maywood, Ill.; Pennsylvania Flexible Metallic Tubing Co., 72nd St. & Powers Lane, Philadelphia, Pa.; Seamlex Co., 5-19 48th Ave., Long Island City, N. Y.; Summerill Tubing Co., W. Fourth St., Bridgeport, Pa.; Titeflex Metal Hose Co., 500 Frelinghuysen Ave., Newark, N. J.

There is also a company which makes a vibration eliminator for compressor bases by the name of Korfund, 48-15-32nd Pl., Long Island City, N. Y.

### HERE'S A DIRECTORY FOR SPAIN

Jose Lopez Zuera  
256 Muntaner  
Barcelona, Spain

Sirs:

As a subscriber of AIR CONDITIONING & REFRIGERATION NEWS, and according to the advertisement published in the issue of March 12, I am writing to you to ask to kindly send us a copy of the 1941 Refrigeration & Air Conditioning Directory, which I am sure will be a valuable book of great help in our business.

JOSE LOPEZ

### JAVA AGENCY WANTS U. S. REFRIGERATORS

N. V. Javasche Ijzer—en Staalhandel  
Koningsplein W.8  
Batavia (C), Java

Editor:

Re: Sole-Agency Refrigerators

As far as we know, manufacturers of refrigerators in your country often are demanding with you for addresses of big importers all over the world, which are capable to introduce their products.

We are glad to inform you that we are keen in a sole-agency for the Netherlands-East-Indies of a first class kerosene operating refrigerator.

Up till now we imported the Swedish "Electrolux" refrigerator. As the export from Sweden practically has been stopped, the agreement with the Swedish manufacturer has been discontinued.

Our company is one of the biggest import houses in this territory, having branches at Batavia, Sourabaya, Semarang, Makassar, Medan, and Bandoeng, our head office and

purchasing department being established at Batavia (C).

All further information regarding our company can be obtained from the correspondents of our bankers in New York:

- 1) Messrs. Irving Trust Co.
- 2) Messrs. National City Bank

Our yearly turnover in refrigerators was still increasing. In 1938 we attained 27% of the total import of refrigerators in this territory. In 1939 our share was about 32%.

As we are intending to reorganize our refrigeration department, we also should like to have full particulars concerning refrigerators of the compressor type, which are well known and have been tested under the tropical conditions.

As at this moment our purchasing manager, Mr. J. N. Vogt, is in the States for a few months, we have to inform you that his address is: c/o Messrs. Devoy & Co., 17 State St., New York City.

PURCHASING DEPARTMENT

### HP. AND B.T.U. INSPIRE POET

Air Conditioning & Refrigerating  
Machinery Assn.  
Southern Bldg.  
Washington, D. C.

Dear George:

You may recall that, some time ago, we issued a news release in which it was noted that ACRMA planned to state the size or capacity of room coolers in B.T.U. rather than in terms of horsepower. Apparently Mr. H. Faller, a poet by avocation, came across this news item, and it moved him to produce an epic poem. Maybe it isn't "epic" or even a "gem"—I don't know. Anyway, I am sending it along, knowing that you would be interested in seeing it. Please return it, as I should like to keep it as an unusual exhibit.

WILLIAM B. HENDERSON,  
Executive Vice President

### A New Animal Appears on the Refrigerating Scene

While life consists of changes and heartaches, for instance, little boys going away to boarding-school for the first time are downcast and blue. Very few citizens have ever heard of the decision of the air-conditioning moguls to change Hp. to B.T.U. . . .

Not without tears, despite its cool reputation, the Air Conditioning and Refrigerating Machinery Assn. decided that horsepower, Had had its hour . . .

Naturally this was quite a shock to the air-conditioning engineers Who had been attached to the horse for years . . .

Somehow B.T.U. Smelled like some other kind of animal, possibly the gnu . . .

Ah yes, it was a hard thing to do. This change to B.T.U. . . .

But they clenched their fists, the A.C. & R.M.A. lads, they did, in spite of sneers zoological. Because they thought they were right, they thought they were logical . . .

In short, while it does seem drastic, They truly believe that vis a vis Hp. B.T.U. is less elastic.

H. FALLER



## Users Help Fixture Co. Sell Six Beverage Coolers a Week

MEMPHIS, Tenn.—Sales of six beverage coolers a week, even during winter months, are chalked up by Mid-South Fixture Co., chiefly because Manager T. J. Hammond thinks his customers are his best salesmen and lets them sell most of his prospects.

The firm employs five salesmen, but they, and Mr. Hammond, always take prospects on a round of stores that recently made installations. The customers invariably make a better sales talk than the salesmen, and they don't receive any bonus from the fixture company. Their response is natural for any owner of a fine piece of modern equipment—they like to talk about it.

"Practically all of our sales are closed after the prospect sees our merchandise in the hands of other dealers," Mr. Hammond explained. "This is particularly true of beverage coolers. Often we don't have a single cooler on the floor, but the prospect is taken to a few stores that use them."

One of the most profitable items handled by the firm is the produce cooler, which is being purchased by small stores as well as large ones. Owners help sell these units, too, assuring prospects brought to the store that the big cooler actually eliminates waste and increases produce sales through good display.

Another sales point used by Mr. Hammond is service. A high grade service department is maintained to permit wide guarantees on all equipment.

## La Crosse Markets New Milk & Beer Coolers

LA CROSSE, Wis.—Addition of three new products to its 1941 line of refrigerating equipment has been announced by La Crosse Novelty Box Co.

Feature item in the new line is the "All American" direct draw beer cooler, which boasts a wine chiller and an eight-tray ice cube maker as optional equipment. Finished in two-tone blue and black high bake enamel, the All American unit has a one-piece porcelain top, stainless steel drip pan, heavy chrome hardware, 3-inch sealed insulation, and refrigerated stationary faucets.

The "Club Special," a one-piece combination unit consisting of a two-key direct draw system, a two half-barrel precooler, and a 14-case dry bottle cooler is available with or without a composition bar top. Overall length of this unit is 126 inches.

Third new item in the La Crosse line is the "Blue Ribbon" milk cooler. Armco rust resistant metals are used throughout both interior and exterior of this unit. An extra heavy metal plate is used to protect the top edge. Points of strain are welded. A breaker strip is used between the inner tank and outside metal shell to prevent transfer of cold from the interior to the exterior metal.

Insulation is an approved, rigid, low density type, wrapped in moisture proof paper and sealed with hydrolene. Coils are covered with a heavy expanded metal protector. Removable overflow pipe and 3/4-inch aerator connections are furnished. The unit is finished in standard gray high bake synthetic enamel.

## N. C. Welch Opens Office For Frozen Food Boxes

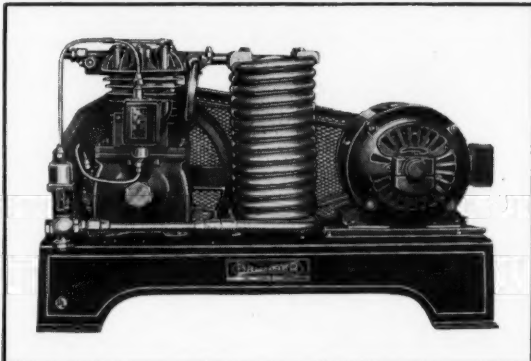
DALLAS, Tex. — N. C. Welch, representative of California Body & Equipment Co., has opened an office at 505 S. Akard here to handle frozen food cabinets.

# HOT STUFF ON COLD FACTS

Now, more than ever, manufacturers of refrigerated show cases and coolers need and want commercial refrigeration condensers that provide continuous, dependable refrigeration. It means customer satisfaction to manufacturers and extra profits from reduced food spoilage to the merchant. Brunner condenser units are the answer. Not only does Brunner provide "top-flight" performance and dependability for years to come, but also assures low operating cost. Brunner carries the Underwriters' Laboratories approval and U. L. Seal. Available for 1/4 to 25 tons of refrigeration. Brunner Manufacturing Co., Utica, N.Y., U. S. A.



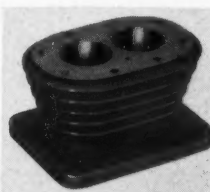
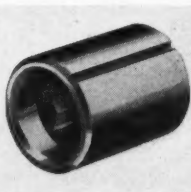
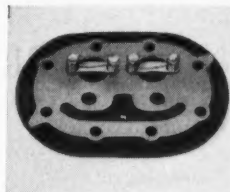
**1 TROUBLE-FREE** performance at low operating cost is a plus-one feature built into every Brunner.



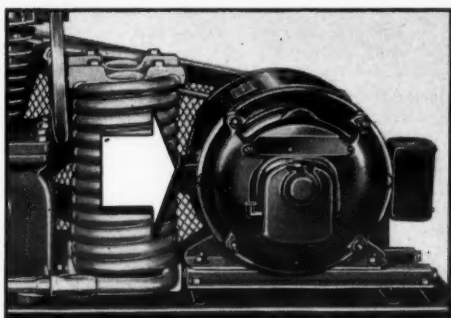
**2 COMPACT**—Brunner condensing units are designed for compactness to fit into small spaces providing more room for display and storage of food products.



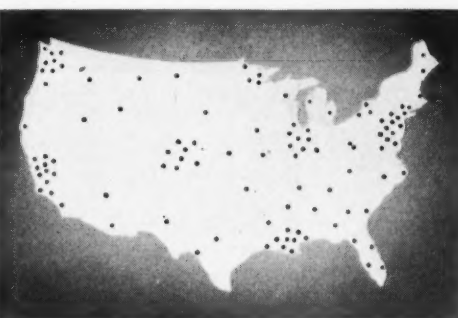
**3 NO VIBRATION**—Brunner units are designed and engineered by refrigeration experts for smooth, quiet, efficient performance. All moving parts are dynamically balanced for vibrationless, wear resistant service insuring long life and low operating cost.



**4 INTERCHANGEABLE**—The all-in-one valve assembly, bronze bearings, silent eccentric drive and cylinder heads and other moving parts are precision machined and perfectly interchangeable with new parts permitting important savings of time and repair expense.



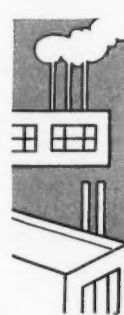
**5 OVERLOAD PROTECTION**... Automatic overload protection prevents motor from burning out. Permits continued refrigeration thus preventing food spoilage and profit loss to merchants.



**6 EXPERT FIELD** engineers are available for consultation and servicing of Brunner equipped units throughout the United States. They work out the right equipment to meet your demands.

## How one manufacturer PROFITS WITH BRUNNER...

A well-known manufacturer of refrigerated display cases, who uses nothing but Brunner units, enjoys customer confidence and good-will because Brunner units are providing trouble-free performance at low operating cost in thousands of installations. In addition, Brunner's Engineering Service has saved many dollars by cooperating with him in working out the right capacity unit for the right job. Write for Brunner service and details.



**BRUNNER**  
FOR YEARS THE  
SYMBOL OF QUALITY

● SEND for the  
"inside story".  
Brunner superi-  
ority illustrated  
point by point.

GET THESE  
MONEY  
SAVING  
FACTS

## Gorilla Stars of Circus Now Take Sun Baths

NEW YORK CITY—Added to the air conditioning system that simulates tropical air conditions for Mr. and Mrs. Gargantua, the gorilla stars of Ringling Brothers and Barnum & Bailey circus, a standard Westinghouse S-4 sunlamp now provides the equivalent of African sunlight for the pair.

Lolling back on her couch at one end of her cage like a bathing beauty, Mrs. Gargantua, or Toto, basks for three or four hours every day. Gargantua takes the sun for like periods. The lamps are placed directly in the cages, with applications lasting from a half hour to an hour and a half at a time, much longer than recommended for human beings.

Eight 20-inch Sterilamps have been installed in the air conditioning system to provide bacteria-free air for the gorillas, which, despite their ruggedness, are subject to colds.

## Refrigeration Helps Small Branch Bakeries Get The Proper Smell

DENVER—Refrigeration has increased sales for bakeries which have a central baking plant and retail through small outlets by making those outlets smell like bakeries, it was learned at the recent Rocky Mountain Bakers conference here.

The fragrance of bread being baked is important in attracting customers into the store, bakers have found. Heretofore the units of the chain lost sales because they did no baking.

Now the central baking plants prepare dough, store it in refrigerators until wanted, and then transport it in refrigerated trucks to the retail outlets as needed. The retail shops also have refrigerated storage rooms and small ovens.

This method permits the stores to have the proper smell, and enables the central plant to operate on a production basis to minimize losses.

## Plastic Coating For Steel Announced

DETROIT—"Marlox," a plastic coating for steel and non-ferrous metals, has recently been made available by Marley Chemical Co. here. This material is said to exclude the air film present under most finishes, and for this reason protects metals against salt spray, acids, and high humidity conditions.

The finish may be applied by painting, spraying, or dipping, and when baked at 310° a glazed finish develops. A tough, elastic film is formed, which does not crack or chip with ordinary bending and stress.

Marlox has been manufactured for some time in Canada, and according to Marley Chemical Co. has been used successfully to protect metal doors on airplane hangars.

The company claims that Marlox may be applied successfully to refrigerator cabinets, linings, evaporators, air conditioning coils (steel), certain valves, pipe, and other materials.

## Employment & Payrolls Of Cooling Mfrs. Increase Sharply

WASHINGTON, D. C.—Sharp employment and payroll increases in the manufacture of refrigerators and refrigerating apparatus are revealed by latest Department of Labor statistics made available here.

A department index, based upon the 12-month average of 1939 as 100, listed employment in the manufacture of refrigerators and refrigerating apparatus at 152.3 in April, as compared with 147.7 the preceding month and 126.0 in April of last year. Payrolls reached 181.6 in April, as against 173.8 in March and 136.5 in April, 1940.

With the 1939 average as 100, employment in the production of washing machines, wringers, and driers reached 133.2 in April, compared with 125.4 in March and 106.3 in April, 1940.

**DU PONT**  
REG. U. S. PAT. OFF.

# Artic

REG. U. S. PAT. OFF.



You get the help of Du Pont Research  
and Technical Assistance  
with Preferred METHYL CHLORIDE  
plus Coast-to-Coast Prompt Distribution

**DU PONT**  
REG. U. S. PAT. OFF.

For information about nearest source of supply, write to:  
The R. & H. Chemicals Department  
E. I. DU PONT DE NEMOURS & COMPANY (INC.)  
Wilmington, Delaware  
or NATIONAL AMMONIA DIVISION  
Frankford P. O. Philadelphia, Pa.



The Heat's on . . .

## Calorimeter Developed By Gale Will Operate Over Wide Range

3 Sizes of Valves & Rheostats Are Incorporated In Device To Provide Flexibility In Testing

By George Lindgren, Engineer, Gale Products, Galesburg, Ill.

The principles employed for the calorimeter we have developed at Gale are briefly the following. The heaters are placed at the bottom of heat exchange tank flooded with "Freon-12" liquid. The cooling coils are mounted at the top in same tank surrounded by "F-12" gas.

When operating the instrument the proper heater coil, (as to the capacity of condensing unit) should be selected, by switches 3 and 4, so that the control No. 8 and automatic relay No. 6 does not cycle too often.

The heat introduced into the "Freon-12" bath causes the liquid to evaporate and the pressure in the tank to increase. The cooling coil condenses the vapor and causes the pressure in the tank to decrease. Gauge No. 26 shows the pressure in the tank.

To avoid losses by temperature differences, the control switch No. 8 is set to operate at a pressure which corresponds to the room temperature selected for the test.

We usually test in room temperatures of 90° F., in which case the

control should be set at 98 pounds cut in, and 101 pounds cut out, (the differential of the control is 3 pounds). The input of energy then will be equal to the capacity of the cooling unit, which is the only agent that removes any heat.

You will also note from the diagram that there is provision made for sufficient flexibility as to the size of the cooling coil and also three sizes of expansion valves.

You will also find that the 110 volt circuit for the condensing unit is equipped with three various sizes of rheostats for the purpose of regulating the voltage for any size of condensing unit within the capacity of the calorimeter.

The power type switch is equipped with a pointer, which should be mounted in a position so that it points in the direction of the rheostat in use. This is important, to prevent the error of using a rheostat of too low a capacity in regard to the current of the condensing unit.

The operation is as follows: Before starting the unit, be sure that



"Just five minutes to make that train!"

A HURRY-UP CALL from a Jersey City customer—and the Bundy sales engineer is on his way, ready to take over completely the problem of designing and engineering the tubing parts of a new product.

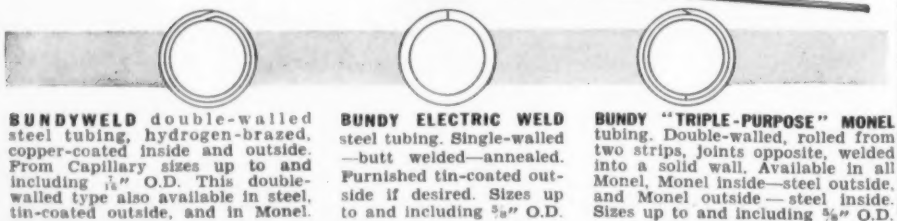
Bundy customers, new and old—some with production schedules running into hundreds of thousands of units annually—soon learn that they can safely drop any tubing problem right in Bundy's lap, and forget it. In dozens of widely varied fields—such as farm tractors, refrigerators, radios, oil burners—Bundy has found ways to improve the product and cut costs.

As a result, a large share of Bundy production is sold as complete parts—bent, flared, flanged or flattened, with fittings included—all ready to assemble into the finished product. Bundy's long experience and highly specialized fabricating equipment form a combination hard to beat in this field.

Do you use tubing in your finished product, or other materials for which tubing might be substituted to advantage? If so, you will find it well worth while to discuss the matter with Bundy's research and engineering department. Address Bundy Tubing Co., Detroit.

## BUNDY TUBING

ENGINEERED TO YOUR EXPECTATIONS

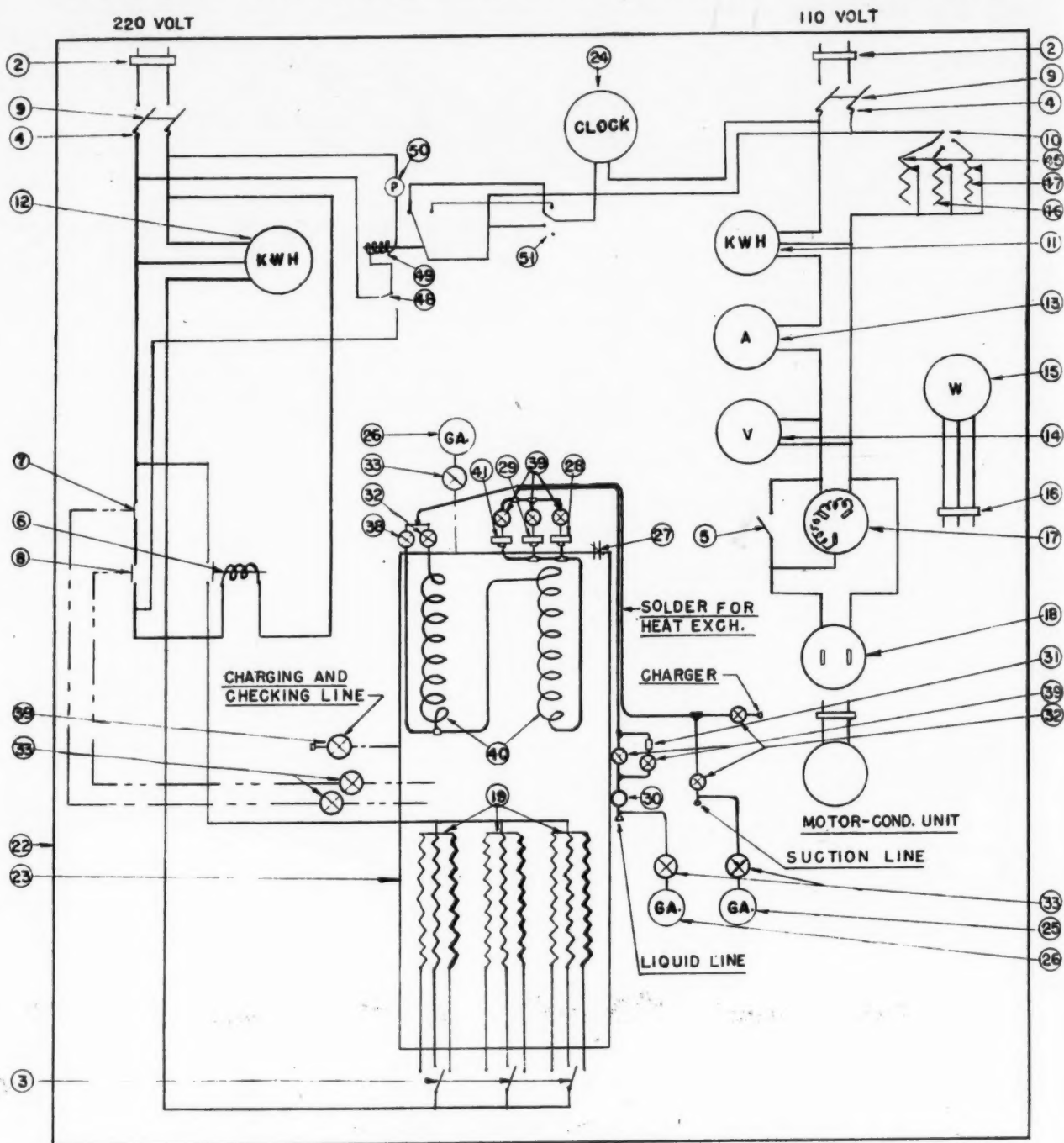


**BUNDYWELD** double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including 4" O.D. This double-walled type also available in steel, tin-coated outside, and in Monel.

**BUNDY ELECTRIC WELD** steel tubing. Single-walled—bent, flared, flanged or flattened. Furnished tin-coated outside if desired. Sizes up to and including 3/4" O.D.

**BUNDY "TRIPLE-PURPOSE" MONEL** tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel, Monel inside—steel outside, and Monel outside—steel inside. Sizes up to and including 3/4" O.D.

## Electrical & Refrigeration Circuits of Calorimeter



This schematic drawing traces both the electrical circuits and the refrigeration lines and equipment in the new calorimeter developed by Gale. Key to numbered parts follows: 2, cond. service cord with plug; 3, toggle switches; 4, fuses; 5, toggle switch; 6, automatic switch; 7, safety pressure control; 8, operating pressure control.

9, knife switch; 10, power tap switch; 11 and 12, kwh. meters; 13, ammeter; 14, voltmeter; 15, portable wattmeter; 16, 3-pole cond. cord and plug; 17, 3-pole receptacle; 18, 2-pole receptacle for cond. unit; 19, 2,000 watt heater (3 stages); 22, mounting stand; 23, heat exchange tank; 24, electric clock; 25, compound

gauge; 26, pressure gauge. 27, safety pressure relief valve; 28 and 29, expansion valves; 30, liquid indicator; 31, dehydrator; 32, 33, 38, and 39, shutoff valves; 40, cooling coils; 41, expansion valve; 45, 46, and 47, rheostats; 48, switch pilot light; 49, clock relay; 50, pilot light; and 51, clock switch.

the proper selection (as mentioned above) has been made. Then start the unit and let it run awhile, so it gets properly warmed up and oil and gas get a chance to balance. Then set the minute arm of the clock No. 24 at 12. Read the wattage on the kilowattmeter No. 11 to the last two values. Then read the kilowattmeter No. 12 also to the last two values.

Then, when the heater current kicks out and meter No. 12 stops, take down the two last figures from meter No. 12 and set selector switch No. 51 at point No. 3, which will start the clock when the heater current kicks in.

At the moment the heater goes on the two last values from meter No. 11 should be taken, and before the heater current cuts out again the switch No. 51 must be set on point No. 2, which will permit the clock to operate continuously, regardless of whether the heater current is on or off.

After about 10 or 15 minutes a final reading can be taken. Starting in the same manner with meter No. 11 and then No. 12, when the current cuts out and the final two values on meter No. 12 should be taken, and switch No. 51 set at point No. 4, which will cause the clock to stop when the current goes on again, at which time the last two values of meter No. 11 will be taken and the switch No. 51 set at position No. 1, making clock remain idle when the current of the heaters cuts out and in.

The time must be transferred to decimal fractions of minutes, (not seconds). During the test it is advisable to check the wattage of the condensing unit by using the portable wattmeter No. 15. This meter can be cut in and out of the circuit without disturbance, by using switch No. 5. Be sure that wattmeter is plugged into outlet No. 17 before switch No. 5 is operated, otherwise the condensing unit will be cut out.

The result of the readings of meter No. 11 divided by the time in minutes and decimal fractions of

minutes, times 60 gives the current consumption of the condensing unit in watts.

The result of meter No. 12 divided by the same time, times 3.415, times 60 gives B.t.u. per hour.

This description of the calorimeter covers only the settings for tests at room temperature. Any desirable combination of temperature and superheat can be arrived at, in which cases the leak factor must be added to the formula used for figuring the capacity. (The heat exchange tank and expansion valves are insulated very well from the surrounding air and structure of the instrument.)

After the leak factor once has been established for a certain condition relative to a simple test, at pressures corresponding to the room temperature, it is practical to run the test in the simple manner described, and interpolate the result, using the correct leak factors for any condition desired.

## Jewett To Equip 7th Statler Hotel

WASHINGTON, D. C.—Contract for installation of refrigeration equipment in the Hotel Statler which is to be opened here sometime in April, 1942, has been awarded to Jewett Refrigerator Co., Inc.

The Washington Statler will be the seventh consecutive Statler hotel to be Jewett equipped. Jewett's first refrigeration installation in a Statler hotel was in Cleveland in 1910.

## F. C. Hayer Co. Moves

MINNEAPOLIS—F. C. Hayer Co., appliance dealership, has moved from 100 Third Ave. N. to 300 N. Washington Ave.

# MARSH

The Gauge that IS right and STAYS right

WITHOUT the "Recalibrator", Marsh Gauges and Dial Thermometers would still represent the best investment you can make in instrument accuracy. But this feature makes them still better by giving you a simple, sure way of keeping them accurate under all conditions of use—even abuse.

Unlike ordinary zero adjustments, the Recalibrator corrects the source of gauge or thermometer inaccuracy—for the distortion of the bourdon tube. By correcting for the distortion it corrects the instrument at all points of the scale—not simply at the point of resetting.

This feature is available in all Marsh Gauges and standard in all Dial Thermometers. Ask for the big refrigeration industry catalog covering the many refinements of the broad Marsh line.

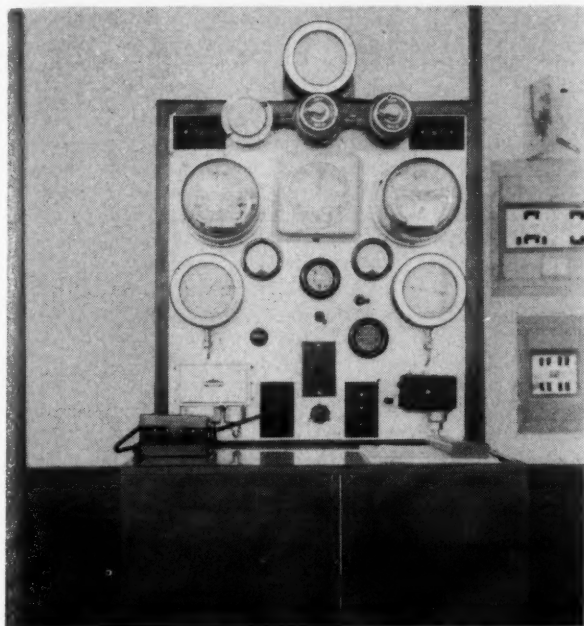
JAS. P. MARSH CORPORATION, 2067 Southport Ave., Chicago



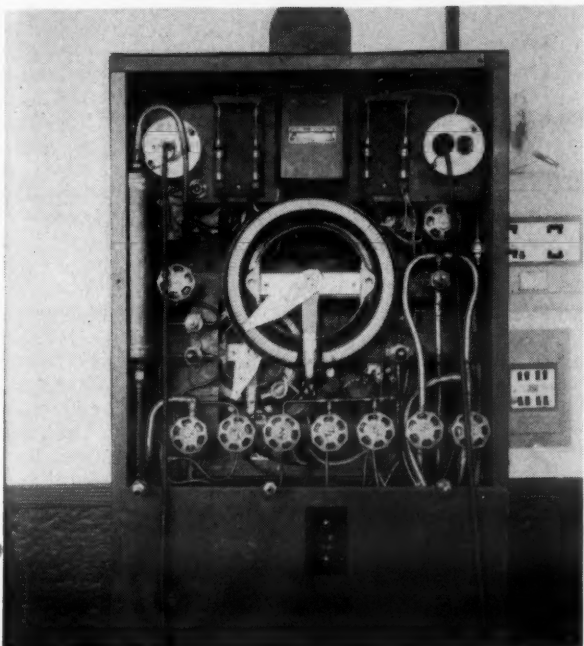
The "Recalibrator" does the trick



## The Calorimeter—What Goes 'Round & What Makes It Go 'Round



Here's the front of Gale's new calorimeter. The clock, various gauges, meters, and control devices are symmetrically arranged to provide a neat appearing panel.



Rear view of the calorimeter presents an appearance as neat as the front. Note the rheostat and row of hand valves.



George Lindgren, Gale engineer, is checking a test run. The cabinet was designed to make note-taking an easy task.

## Crosley Cruiser Marked By Use of Fiberglass

CINCINNATI—Insulated throughout with Fiberglass marine insulation, the fishing cruiser "Wego" has been launched and is ready for its owner, Powel Crosley, Jr., president of Crosley Corp. and owner of the Cincinnati Reds.

The craft has an overall length of 61 feet, beam of 16 feet, and a draft of 4 feet, 2 inches.

Fiberglass is used extensively on the boat, in addition to the marine insulation. Draperies and shower curtains are of Fiberglass, and the 14-foot utility launch is covered with the first Fiberglass tarpaulin ever made.

A new McLachlan underwater exhaust system is said to eliminate virtually all noise from the boat's twin 160 hp. Diesel engines. A photo-electric pilot permits automatic steering. Ship-to-shore communication is provided by a 75 watt R.C.A. telephone system. There is also an automatic log which records distance and speed.

The galley includes a Crosley electric refrigerator. Provision is made to hoist a Crosley car on board.

John H. Wells, Inc., New York City, designed the boat.

## Philco To Supply Radios For Ford Cars

PHILADELPHIA — Philco Corp. has arranged to supply Ford Motor Co. a substantial number of automobile radios for the 1942 model cars.

## Wage-Hour Division's Rulings Alter Status Of 'Wholesale' Sales

WASHINGTON, D. C.—Many sales by electrical appliance retailers now defined by the Wage and Hour Division as wholesale sales will be removed from coverage of the Fair Labor Standards Act by a new interpretative ruling.

Under the present interpretation electrical appliance sales made to commercial customers are defined as wholesale sales. This applies particularly to apartment house installations. These sales will now be defined on a basis of quantity and discount price.

If the appliance is sold for an apartment house installation at the same price as regularly made to the consumer or residential customer, the sale will be regarded as retail. If it carries the discount price usually made to the commercial customer it will be defined as a wholesale sale.

The new yardstick for determining coverage of wholesale and retail establishments is expected to clarify the confusion which has existed from the beginning of administration of the Act concerning borderline cases.

Although the definition of a retail business will probably be changed to one which makes at least 80% of its sales at retail instead of 50%, as at present, retailers actually will receive a greater exemption, according to Wage and Hour Division attorneys, because a number of transactions now defined as wholesale will be placed in the retail classification.

## Furnishings Men Told How To Meet 'Crisis'

CHICAGO—Adherence by manufacturers and retailers to a program that would prevent government control of the home furnishings industry was urged by speakers at an industry-wide breakfast meeting sponsored by National Retail Furniture Association during the recent market here.

Speakers, including Lorenzo Richards, N.R.F.A. president; J. H. Hufard, Nathan S. Sachs, Herbert E. Bennett, and Louis Bing, Jr., hammered home one dominant theme—that the emergency which has been in prospect for several years is here, and that business management must face the crisis.

Points emphasized were:

1. Refrain from any and all scare advertising.
2. Base price advances only on actual increases in cost, permitting no raises because of "anticipated" increase. Also to average inventories rather than mark them up to the new level of advanced prices.
3. Forget "business as usual." Remember a war economy is on and normal operations must be interrupted for an all-out war effort.
4. Govern the extent of purchases by the individual dealer's demand for merchandise—not on any national averages. Any retailer who develops inventories not based substantially on these measurements faces losses resulting from unwise speculation.
5. Make and buy fewer patterns. Needless variations of designs are wasteful.
6. Clearly indicate necessary price advances.

# When you Sell a BONDERIZED Product

## YOU SELL A KNOWN VALUE

No matter how much they admire the superb styling and evident mechanical perfection, your customers get a sense of added value when they know the refrigerator, washing machine or ironer you sell is Bonderized.

These customers know the quality added by Bonderizing. They have been reading about it for years in major magazines. Many of them have had experience with it on their cars and other equipment. It is a feature you do not have to sell. All you have to say is, "It's Bonderized," to get attention.

The fact that Bonderizing protects the metal from rust—that finish will not flake and peel off—that it will stay whiter, cleaner and look better longer—is a powerful sales-clinching statement.

**PARKER RUST PROOF COMPANY**  
2197 E. Milwaukee Ave., Detroit, Michigan

### Send for These Books

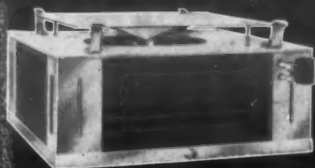
For 26 years this company has devoted its entire resources to the improvement of rust-proofing methods. Books describing Parker Processes are available to manufacturers, technical men, dealers and sales people. Send for your copies.



**PARKER**  
Processes CONQUER RUST  
BONDERIZING • PARKERIZING



## SUPREME UNIT COOLER



Adapted to refrigeration applications where perfect air distribution at low velocity is required.



BUSH MFG. CO.  
HARTFORD, CONN.  
610 N. OAKLEY BLVD.  
CHICAGO

**Bush**  
Mfg. Co.

COMMERCIAL COOLING UNITS by

## Bottenfield & Graham Organize Whiting Stoker Co.

CHICAGO—Whiting Stoker Co. has been organized by A. E. Bottenfield and George W. Graham to take over manufacture of the complete line of Whiting stokers formerly produced by the stoker division of Whiting Corp. The new company will manufacture stokers exclusively at its plant at 4711 W. North Ave. here.

Mr. Graham, who for the past 12 years has been actively operating the Whiting Corp. plant, continues as president of that firm in addition to assuming the presidency of Whiting Stoker Co.

Mr. Bottenfield is vice president and general manager of Whiting Stoker Co. Before joining with Mr. Graham in this new enterprise, Mr. Bottenfield was associated with the stoker division of Whiting Corp. Prior to that time he had been connected with Delco Light, Kelvinator, and Frigidaire.



# A.S.R.E. Discussion Group Gets 'Down To Cases' on Locker Plant Problems

## Temperatures, Freezer Burn Problems, and Packaging Methods Are Debated

CINCINNATI—Current problems in the refrigerated locker plant industry got a pretty thorough airing during a "Discussion Luncheon on Locker Plants" held in conjunction with the recent spring meeting of the American Society of Refrigerating Engineers at the Gibson hotel here.

Chairmanned by Roger Sprague of Baker Ice Machine Co., ably seconded by Harry Carlton of the University of Tennessee, the meeting brought out the views of a small but select group which included representatives of commercial refrigeration dealers, locker owners, government experts, state agricultural authorities, manufacturers' representatives, locker plant building consultants, just plain engineers, and three authors of books on locker plant operation.

As is universally the case in any meeting of an industry group this year, the question of just how the industry will serve in the present emergency was brought up.

Various government agencies have concerned themselves with this, it was revealed by Mr. Sprague. While no definite law or measure has been as yet passed or put into effect, the following represents the general thinking of what might be done:

The government favors decentralization of food storage and warehousing, and is considering a plan somewhat similar to that used in England.

Basic idea of the plan is to spread out and preserve supplies of commodities that will provide the best dietary balance.

Locker plants fit into this scheme exceptionally well, but this does not mean that even when the plan goes into effect that all locker plants will be used in the plan.

What seems to be now proposed is for the government to make some selection of plants by areas, probably taking those plants which appear to have the best chance for future expansion of business.

Then the government agency (as

envisioned in the plan) would contract to rent so much space from this locker plant over a period of five years.

The locker plant operator could then borrow against this rent contract to build the plant addition necessary to handle the governmental storage requirements.

The larger warehouses and some commercial freezing and storage interests have been in opposition to the plan, but the canning industry—once opposed—no longer bucks it.

Since the discussion was highly informal with no effort to stay on any one subject, a report of it will be most valuable probably in just giving some of the main points that were apparently agreed upon by the experts present:

**Potential of locker plant users.**—According to one survey reported on by Mr. Sprague, the ratio of potential users varies by the type of community. In the ordinary city, four out of every 100 householders is the market, in ordinary agricultural communities this jumps to 35 out of every 100, and in prosperous fruit and dairy farming country the potential is as high as 50 out of every 100 householders.

**Ideal size of the locker plant.**—300 lockers still considered about right. Larger plants okay only where situation justifies it.

**Pipe coils or vacuum plates.**—There are arguments on both sides. Pipe coils seem to be preferred by some for shelves. However, the feeling was expressed that the merits of plate coils have not been well enough sold.

**Blower type cooling units in the locker room.**—Have worked out all right. One refrigeration dealer uses a controller to cut his blower speed in half when the thermostat cuts the refrigeration system out. This provides satisfactory circulation at reduced cost.

**Processing charge on fruits and**

vegetables brought in by the user—6 cents a pounds should yield something of a profit. This includes packaging and blanching for vegetables, syrups for fruits. However, the user must clean his vegetables, stem his strawberries, etc.

**Size of packages.**—Standardized packages needed. The 12-ounce package is criticized by both locker plant operators and users. A better scheme would be pint and quart packages, with the quart package the same general proportions as the pint, but just double in size.

**What makes a good package.**—Vapor tightness is the test of a good package. Michigan's agricultural experiment station has run tests which indicate that some of the higher priced cartons don't have a vapor seal. The rubberized (latex) package is very good, and only 3% higher in cost than water-proofed cellophane, it was stated. It can also be evacuated and thus eliminate freezer burn, and it maintains poultry shape better.

**Is there a container than can be used for from one year to the next for frozen pack fruits and vegetables?**—This point was raised by Mrs. Pownall, who operates a locker plant in York, Pa., and who referred to the housewife's use of Mason jars from one year to the next. Some paper "cans" have been developed, it was disclosed, but so far it hasn't been possible to renew the seal.

**Are present individual locker sizes large enough?**—General consensus seems to be "yes." If patrons want more room, let them rent another locker. However some plants, to accommodate their users in peak seasons, have provided bins into which the surplus can spill over.

**What can be done to prevent freezer burn?**—Freezer burn is caused by the variation in temperature from the standard. Prevention of freezer burn is mostly a matter of packaging, of getting a "sealed" bundle. Said W. E. Guest, Chicago locker consultant: "Try your new employee on wrapping flour and sugar, until he can get them perfect. Then he is ready to wrap articles for the locker plant."

**Blast freezing in the chill room.**—Some say yes, some say no. Middle position is that it's okay if the packaging is done right.

**What's the correct locker room temperature, 0° or 10° F.?**—Quite a battle over this. Mr. Guest declares that experience has demonstrated that 10° is very satisfactory if products are held not more than nine months. But Mr. Carlton of the University of Tennessee says temperatures must be established on the assumption that foods will be held for possibly one year, in which case the temperature must be 0° F. Pork and poultry fats, particularly, won't hold well at 10°. Mr. Guest says that experience has demonstrated that the increased power cost in operating a system at 0° as compared with 10° is a 20% increase.

**What kind of regulation of locker plant operation is desirable?**—The Joint Locker Industry Committee hopes someday to get into effect some standard set of regulations or a model law that might be put into effect in the various states. Meanwhile state locker groups are urged to watch closely any efforts to pass regulation. It also appears likely that the U. S. Bureau of Animal Industry may provide some kind of regulation—perhaps through an inspection setup.

## St. Joseph, Mo.'s First Plant Is Opened

ST. JOSEPH, Mo.—First freezer lockers to be opened here will be the 300-locker plant being installed in the new Bartlett's Super Market, Karnes Road and Ashland Ave. These will be opened to customers about June 1 or shortly thereafter. Jack Bartlett is owner of the market and plant.

Lockers are being installed by Premier Engineering Co., of Des Moines, Iowa, at a cost of approximately \$5,000. McQuay equipment and ice machines are being used.

## Shape of Product No Barrier To Use of Frick 'Blizzard' Quick Freezing Unit

WAYNESBORO, Pa.—A quick-freezing unit developed especially to meet the needs of packers, fisheries, growers, canners, locker plants, and other producers of frozen foods in fairly large quantities is being marketed by Frick Co. under the name "Blizzard Freezer."

This new unit is claimed to be capable of handling almost any product, whether irregular in shape like poultry, frozen loose on trays like peas, or frozen in pans or cartons like fish fillets, berries, etc.

The Blizzard Freezer is contained in an insulated box measuring about 12 feet long by 7 feet wide by 8 feet high, outside dimensions. A cold storage door admits a push truck to a tunnel or compartment occupying a little less than half of the freezer space. Special cooling coils of the Frick VW type fill the space on the other side.

The foods to be frozen are packed in the push truck, which is rolled into the freezer until it fits against the housing of a powerful fan. The air, after being cooled to -40° or -50° F. by the coils, is blown over the foods by the fan at velocities up to 3,500 feet per minute.

As an example of the rapid freezing effected by this unit, it is claimed that fish fillets in pans 2 inches deep are frozen to 5° F. at the center of the mass in less than two hours.

This freezer is so compact that it is adapted to portable service when desired.

One Blizzard Freezer unit, when handling pans each holding 5 pounds of food, is said to be capable of turning out in a 12-hour day 6,000 pounds of frozen products.

As many units as needed can be installed side by side, using the same ante room. The 8-inch cork wall is reduced to a 1½-inch partition where two freezers adjoin each other.

All the equipment is of simple, sturdy construction; there are no tricky mechanisms. One unskilled laborer, it is claimed, can take care of half a dozen or more Blizzard units, including the loading and un-

loading of the pans in the trucks.

Defrosting usually is not necessary more than once a week, while in some cases once a month is sufficient. The low temperature in the unit freezes most of the moisture out of the air in the form of snow. The high velocity of the air over the coils blows off a great deal of the frost that forms on them.

Defrosting is accomplished quickly, without the use of auxiliary receivers and complicated valve adjustments, and without raising the temperature of the whole unit.

Because of the batch method of operation, a Blizzard Freezer can handle fish in pans during one cycle and freeze ducks or fruits during the next. Where several units are in service, each can be working on a different freezing time, as required by different products.

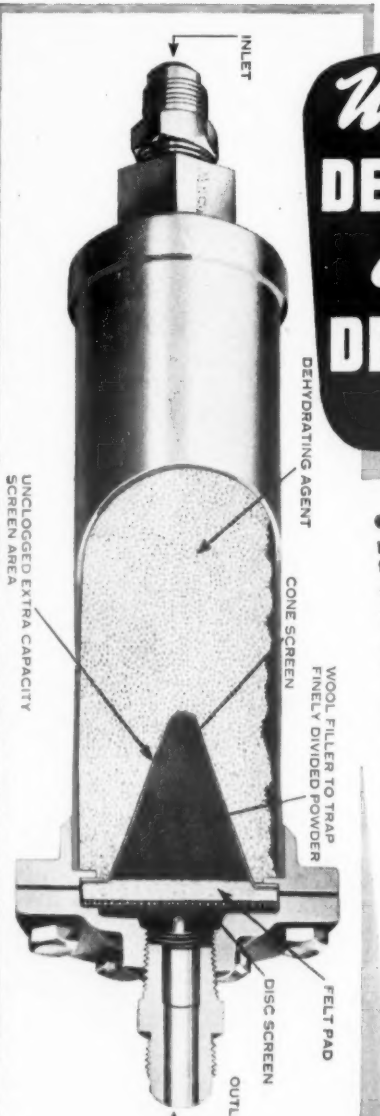
The VW coils are arranged in sections, each section having its own liquid and gas headers. As opposed to the design using long continuous coils parallel to the air stream, which would be very inefficient for such work, VW coils have dozens of short pipes at right angles to the airflow.

The pipes give many times the free area for gas travel available in long continuous coils; hence VW coils can be operated full-flooded, and give the highest heat transfers, it is claimed.

Low temperature refrigeration equipment recommended for the Blizzard Freezer is the Frick ammonia booster system. This employs two-stage compressors, and is said to save up to one third in the power cost that would be required for a single-stage machine. Some of these booster systems are claimed to have saved as high as \$20,000 a year for their owners.

In the Blizzard Freezer the effect of dehydration is claimed to be very small, because of the short time during which the foods are in the tunnel, and the extremely rapid freezing of their surface.

Cry-O-Vac latex coverings can be used to give protection at this point.



**When You Buy DEHYDRATORS Also Buy DEPENDABILITY**

● Mueller Brass Co. Dehydrators are provided with a greatly improved feature...THE CONE SHAPED SCREEN, as illustrated here.

The cone shaped screen filled with pure wool, directs the fine particles of the drying agent to the outside of the base of the cone. Any particles that pass through the screen will lodge in the wool filler without clogging, leaving the center free for the passage of the refrigerant.

We build a complete line of reliable dehydrators, and they are sold at a fair price. We know the consumer does not want an inefficient dehydrator even at the saving of a few cents, and we don't believe that you would knowingly risk the possible loss in dollars as well as in reputation. A small increase in cost necessary to make any device thoroughly reliable is always justified. When you buy dehydrators, also buy that dependability which is built into all Mueller Brass Co. time-tested refrigeration products.

**MUELLER BRASS CO.**

Your jobber deserves your patronage. He assembles thousands of products of hundreds of manufacturers from all parts of the country. He stocks them under one roof so that you can get what you want in a hurry, and at the right price.

**PORT HURON, MICHIGAN**

## Locker Plant Owners SAVE MONEY Installing MASTERBUILT

Every compartment and every drawer is a completely individual unit, so any combination may be selected.

Unskilled labor can easily and quickly assemble them outside the cold room and when stacked in the cold room they are ready for immediate use.

Original installation, expansion or replacement is an easy, simple and economical matter with Masterbuilt Lockers.

## 30 Different Sizes

in three main types—provide a type and size for every need. Shown is the SAFT-LOC and "2 in 1" Convertible SAFT-LOC which with the HyDroLoc gives a wide choice of selection.

## Write for full particulars

You can't appreciate the unusual advantages MASTERBUILT Lockers offer until you get the complete details. Write today.

Endorsed and sold only through distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.  
121 Main St. Sioux City, Iowa

Over 200,000 Masterbuilt Lockers in Use



## Variety Is Spice . . .

## Locker Plants Present Unusual Problems For the Service Man

CHICAGO—Some of the operating difficulties which the service man may come across if he devotes much of his time to maintenance work on refrigerated locker storage plants were outlined recently by A. F. Sawyer, locker specialist for Dole Refrigerating Co.

Although it can hardly be considered a typical service call, because of the many out-of-the-ordinary conditions encountered, it serves as a particularly good example of the variety of servicing operations which might be necessary in some instances, especially where some used equipment has been employed in the system.

Following is Mr. Sawyer's report as to the causes and corrections of poor operating conditions in this particular plant, on which the owner's complaint was that the compressor was running most of the time:

## MAKEUP OF PLANT

The main locker room was roughly 23 by 28 by 7 feet high, and contained 42 12-inch by 144-inch plates in seven banks of six plates each. Due to low head room, the banks were double, three plates high on about 4½-inch spacing. One 1-ton ammonia thermostatic valve was used on each bank, making seven valves in the room. Plates were over lockers instead of over aisles. Room temperature was 10°, outside temperature 60° F.

The compressor was a rebored 3½ by 3½-inch two-cylinder ammonia unit. It had new pistons and rings, also new-type ring valves. Since a 5-hp. compressor should be ample for this job, the compressor head was opened for inspection of valves, disclosing drops of water all over the valve assembly. An excessive amount of dirt and chips also was found on valve assemblies, as there was no scale trap in suction line. The discharge valve on one cylinder was in bad shape, and was ground in for some improvement, and a new valve recommended. Another serious trouble was excessive clearance, amounting to at least 1/16 inch where it should have been no more than 1/64 inch. After reassembling, a wattmeter test was made. At 10 lbs. back pressure, the reading was 3.75 kilowatts.

The electrician's charts showed 6.2 kw. for full load on a 7½-hp. motor. Thus, taking 7½ by 3.75/6.2 we find a delivered horsepower to the compressor of 4.55. However, it is certain the compressor would have no

more than two thirds the efficiency of a new one, or the equivalent of about a 3-hp. compressor.

A test of the oil used in the system disclosed that at -14° it had the consistency of vaseline. It was recommended that this be changed to oil with a -20° cold test. This may also have had some effect on poor valve regulation for although there was an oil separator on the discharge, some oil may have been getting by.

For further check on the moisture situation, a cup of oil was drained from the separator and found to contain at least a tablespoonful of water. Asked them to drain this regularly to reduce water in system.

## DEFECT IS FOUND

After about a four-hour run during which time most of the valves were opened one or two turns for better flooding of plates, it was noted that the thermostat controlling the solenoid valve in the suction line of large room had cut out. Since this should leave only the sharp freeze plates connected to compressor (chill room valve was off) it was then expected that back pressure would drop rather rapidly. However, it still remained at 7 to 8 lbs. so the action of the solenoid valve was tested. It proved to be defective and hammer raps were necessary to make it close. This condition greatly aggravated the long running of compressor, since only the opening of the last thermostat (of three) would shut off compressor. The sharp freeze room could not pull down and shut off because the 42 plates in the locker room were still open to the return line.

Placing the plates in a horizontal position greatly reduces their effectiveness, it was discovered. On three of the banks the long edges were touching, giving the effect of plates 24 inches wide, and as a result the circulation through these was very poor. For a test, a thermometer was placed in the air between these plates and with the plates at -10° and room temperature at +10° the air between plates was 0°. This means the plates are working at a T.D. of 10° and doing only about half the work they would do if vertical.

It was noted several of the plates were sagging at center or ends due to hanger location. They showed frost on the low spots and none on high places. This is a bad type of installation, allowing a surging and

slugging condition. On a normal vertical plate the bottom feed allows a constant uphill path for the liquid and gas, thus permitting the liquid to drop back and do its work in the plate while the gas passes out.

Another bad feature was the main return line being at the same height as the last plate, thus passing liquid easily into return. Although there was no overhead room for it on this job, it is important whenever possible to locate the return 6 inches higher than plate outlet, to maintain a better flooded condition in the plates.

The owner agreed to have the compressor made efficient or a new 5-hp. job installed, and the contractor agreed to change the defective solenoid valve. Since there is plenty of plate surface, it is probable that a new compressor will result in satisfactory operation.

## Wis. Locker Storage Men Believe Defense To Bring Expansion

FOND DU LAC, Wis.—Cooperation of the frozen food locker industry in national defense, and the rising tide of branch plants being built to serve both urban and farm communities were chief topics of discussion at the third annual convention of the Wisconsin Frozen Food Locker Operators held here recently.

More than 200 plant operators from Wisconsin, Iowa, and Minnesota, attended the two-day meeting. The conference was staged in cooperation with the University of Wisconsin College of Agriculture.

Robert Wolfgram, Beaver Dam, was named president of the association for the coming year. He was formerly assistant secretary. Other officers selected were L. E. Bothell, Monroe, vice president; and Alfred Cory, Fort Atkinson, secretary-treasurer.

Mr. Cory and Mr. Bothell were also named as directors for three year terms. Mr. Bothell succeeds director J. F. Palmer, Waukesha.

Although action on resolutions, and drafting of an association program was deferred until June 3 at Madison, convention delegates indicated they want the state locker organization to fight for utility rate reduction and for closer cooperation with the state university's agricultural department.

Furtherance of a "sound legislative program" was also suggested. Fond du Lac was selected for the 1942 state convention.

Speaking at the opening session, Delbert R. Card of Minneapolis, vice president of the National Frozen Food Locker Association, urged locker men to cooperate in national defense by declaring that "there is a definite need for fresh meats, fresh fruits, and vegetables in the diets of a large percentage of the American public, including soldiers and defense workers."

Summing up the part the frozen food locker industry can play in the defense program, Mr. Card explained that each locker plant can serve its own individual community as a storehouse for fresh frozen foods which are needed to furnish adequate diets.

"Bulwark of our second line of food defense fortifications," he declared, "is the more than 3,000 frozen foods and locker plants in the United States."

"Present public cold storage warehouse space," he added, "is insufficient to furnish an adequate supply of fresh frozen foods."

"Probably over 70% of the existing locker plants can triple their present processing and freezing capacity without any increase or change in present equipment. It probably will be necessary for more locker plants to build additional bulk storage space to be held at freezing temperatures."

"There are still a large number of communities in our country without locker service. I am safe in saying that the present number of plants could be tripled and still there would be need for locker plants."

"It is one of the aims of the national frozen food locker association," he said, "to assist in every way possible the national defense preparations."

The trend toward construction of branch locker plants was discussed by E. E. Jackson of the locker division of Midwest Metal Stamping Co., Kellogg, Iowa.

"A branch plant," he said, "technically is a unit consisting only of a locker room with no freezing or processing facilities, those operations being delegated to a main plant."

"Branch plants help operators get extra volume of business without any great increase in overhead," Mr. Jackson declared. "Branches also help solve the problem of bringing locker service closer to the farmer, and make it possible for each operator to serve a wider territory and protect himself against competition from plants in surrounding towns."

"In Iowa, the locker center of the United States, there already are some 65 branch plants in operation."

"Branch plants have a definite place in our industry," he asserted. "It is a new phase of the locker business that every operator should study. If he does not put in branches himself, he should consider what the effect will be if other plants in surrounding towns extend in his direction with branches."

"I believe the development of branch plants will mean to a certain extent the decentralization of the locker industry. There will be fewer plants built in the future with a larger number of lockers. Rather, there will be more combinations of main and branch plants doing a much larger volume of business and reaching a much greater number of patrons than would otherwise have been possible."

In Wisconsin and in other states, Prof. Marvin A. Schaars of the University of Wisconsin Agricultural Economics department advised locker operators, the trend is toward taking on "sidelines" to augment the locker business. These sidelines range, he said, from maintaining dairy bars and retail meat markets to lunch rooms, fur coat storage, and storage of animal foods.

Other speakers at the convention included H. C. Sagle, Durabilt Steel Cabinet Co., Aurora, Ill.; James Lacey, University of Wisconsin animal husbandry department; Lee Turley, Nekoosa-Edwards Paper Co., Port Edwards, Wis.; R. J. Crosby and E. J. Kramer of the University of Wisconsin department of agriculture and markets; and Russell Plager, public relations man for the National Livestock & Meat Board.

Instead of a program lecture series, the Wisconsin locker convention was highlighted by a series of roundtable discussions between experts and plant operators.

## Stock Exchange Member May Experiment In N. J. With a Locker 'Chain'

FLEMINGTON, N. J.—A frozen food locker storage plant which may possibly be the forerunner of a chain of such plants in the small-town area surrounding New York City is being built here by M. Hubert Hilder, member of the New York Stock Exchange and a resident of Pattenburg, N. J.

Formal opening of the plant is scheduled for June 14, but Mr. Hilder already has announced that he is contemplating the erection of a series of similar units in other semi-rural localities not too far away from New York City.

Site of the Hilder plant is directly opposite the Flemington Auction Market, cooperative center for some 3,000 farmers in this section.

Feature of this 480-locker plant will be a 20-foot-long street-front window through which passersby can watch the butcher and plant attendants handling the food processing, and the patrons using their lockers. The plant will use the type of locker system in which lockers are raised by an electric hoist from a cold storage vault into a room of normal temperature for servicing.

## Wolverine Offers Stock To All Employees

DETROIT—Directors of Wolverine Tube Co. have declared a dividend of 15 cents per share on the company's common stock payable June 30 to stockholders of record June 16.

At the same meeting action was taken to make available to employees of the company from treasury shares 2,500 shares of the common stock, in addition to 7,500 shares previously made available to certain of the junior executives. It was announced that 48,078 shares of common stock, heretofore outstanding, have been purchased for the treasury.

After giving effect to such purchase of the treasury and sale to employees, there will be issued and outstanding in the hands of the public 350,544 shares of common stock of the par value of \$2.

PROFELT

from V-belt installations with

Gilmer BELTS

You're sure of handsome profits . . . and satisfied customers . . . when you sell Gilmer Belts for all types of V-belt installations.

Gilmer F.H.P. V-Belts fit over 7800 models, makes of electric refrigerators; also oil burners, stokers, air conditioners, beer pumps, water pumps, compressors and other appliances.

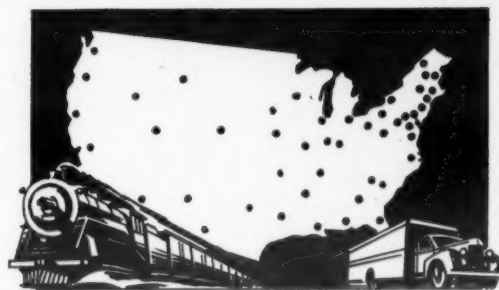
See your Gilmer Distributor and ask him for a Gilmer "Eye-Ful" Tower Belt Assortment—a self-seller that brings you a clear profit of \$15.40!



WRITE for your free copy of the new 1941 edition of "America's Belt Bible."

L. H. GILMER COMPANY  
Tacony, Philadelphia, Penna.

## Nation-wide Distribution



## Another Reason for Using KELVINATOR PARTS AND SUPPLIES!

Count on Kelvinator when you need refrigeration parts and supplies IN A HURRY! A nation-wide system of strategically located warehouses makes possible prompt deliveries in any part of the country.

This is just one of the reasons why you'll be money ahead if you standardize on Kelvinator refrigeration parts and supplies.

Send now for our new 1941 Refrigeration Supplies Catalog. Use the coupon.

Kelvinator Commercial, Parts & Service Division  
Nash-Kelvinator Corp., Detroit, Mich.

Get More—

Get KELVINATOR

Please send me complete information on Kelvinator  
☐ Parts and Supplies ☐ Commercial Equipment  
Name.....Address.....City.....State.....K-125



## Refugee From Europe Arrives At Servel Despite Capture

EVANSVILLE, Ind. — Captured three times by warring nations, returned to the original port, and then sent across Russia, Siberia, the Pacific, and two-thirds of the United States, a refugee from battling Europe has finally reached Servel, Inc. here—a shipment of Swedish steel.

Swedish steel is used for valves on refrigerating machines. Servel formerly placed orders for this material about six months before it would be needed. Before the outbreak of the present war, however, the company bought heavily from American warehouses and placed orders abroad.

A shipment ordered in August, 1939 left Petsamo, Finland in the fall of 1939. It was seized twice by the Germans and at least once by the British, and eventually was returned to Petsamo. Unloaded and reshipped overland, it arrived at its destination a short time ago, bearing "battle scars" with some of the sheets damaged beyond use.

## Schmidt's Opens Remodeled And Enlarged Store

SHEBOYGAN FALLS, Wis.—Remodeled and enlarged hardware store has been opened by Schmidt's, dealer for Frigidaire. Willard Schmidt heads the firm.

## Aluminum Co. Tells Situation on Supply

PITTSBURGH—Just how heavy have been the demands of the national defense program on the aluminum industry is outlined in an article in the current issue of "Aluminum News-Letter," monthly publication of Aluminum Co. of America.

"It's easy to understand about aluminum and defense," the article begins. "The whole thing boils down to two simple questions:

"1. How much aluminum are America and England going to need?

"There is only one answer: The democracies must have all the aluminum it takes to win, and nobody knows how much that is.

"2. How fast is aluminum needed? "We don't know, for sure, but just as fast as the aircraft plants, munition plants, shipyards, and the like, can be expanded to use aluminum and other materials for defense.

"Those in authority in Washington are putting together, day by day, estimates of what all these defense industries are going to need, month by month, clear to the end of 1942. These estimates, as issued, are our book of rules.

"For months we have been, and are now, delivering aluminum for defense purposes far in excess of that called for by prior estimates.

"Defense is now taking from us over 40 million pounds a month. Every American ought to have a picture of just how much aluminum that is: here it is:

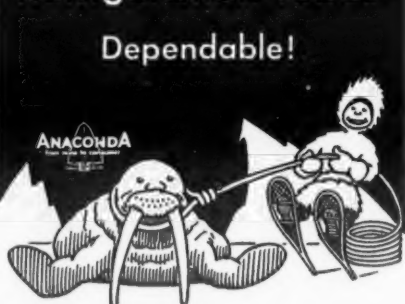
"Peace-time America, during the nine years from 1930-38, could find use for only 14 million pounds a month from us.

"In the busy year of 1939 we had to make 27 million pounds a month to satisfy the civilian needs of this prospering country.

"Suddenly, defense alone needs 40 million a month! 14 million (civilian), to 27 (civilian), to 40 (defense), and soon to 50 and beyond!"

Every effort is being made to increase production of aluminum to a point equal to or greater than the increased needs, the company points out. Users of aluminum can help vastly by keeping every pound of aluminum at work. Scrap can be put back into service, excess stocks can be eliminated, buying can be done intelligently and carefully.

## Anaconda Copper Refrigeration Tubes Dependable!



THE AMERICAN BRASS CO.  
FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.

## SQUARE D IN REFRIGERATION

DO IT ALL WITH SQUARE D SWITCH • PROTECT • REGULATE

Jobber Inquiries Invited

**SQUARE D COMPANY**  
REGULATOR DIVISION  
DETROIT • MICHIGAN

## System Design For Fruit and Vegetable Storage

### Evaporative Condenser, Use of Solenoids Are Featured In Hookup

Editor's Note: This is one of a series of articles discussing methods of estimating load requirements, selecting equipment, and making the proper kind of an installation for specific types of commercial refrigeration installations. Sam Moncher, author of these articles, does engineering work in the New York City area for a refrigeration equipment manufacturer.

By Sam Moncher

Although we seldom think of them that way, the fresh fruits and vegetables of commerce are living organisms with definite cellular activity requiring a constant supply of oxygen. As in animals, the by-products of plant respiration are water and carbon dioxide, accompanied by the liberation of a small quantity of heat.

This is known as the heat of respiration, values of which differ greatly for the different food products and for the different temperatures. At 80° the heat of respiration may vary from 400 to as much as 1,000 B.t.u. per hour per ton of food, while at 40° it will fall to 50-300 B.t.u. per hour per ton. This heat of respiration adds a new factor to be considered in the storage of fruits and vegetables.

The average fruit and vegetable dealer is not concerned with the long term storage of his produce, and a storage temperature of 40° with a corresponding humidity of 85% is adaptable to his purpose of temporary storage until a suitable market is available.

There are certain products, however, which cannot be kept well at so low a temperature, and for which a temperature of 50-55° must be provided. Bananas, lemons, grapefruit, melons, tomatoes, and pineapple are the most common items of this type. Inasmuch as bananas are usually handled by a special distributor, their storage will not be considered here, but in a subsequent article.

Due to the frequent seasonal changes in the prevalence of specific produce commodities, it is advisable, therefore, to equip the storage refrigerator so that its temperature can be changed at will by the purchaser from 40° up to 55°. If two refrigerators are provided, each with its own condensing unit, there will be the added advantage of being able to maintain a low temperature in the one and a high temperature in the other, as conditions may warrant or with the economical shut down of either when this proves necessary. This may be accomplished by the use of a room thermostat in conjunction with a solenoid valve and pressure control, as described in the installation which we shall consider below. (See Fig. 1.)

### Survey Sheet

The installation consists of two adjacent refrigerators each 16 x 16 x 8 feet high, to be kept at a minimum temperature of 40° in an ambient

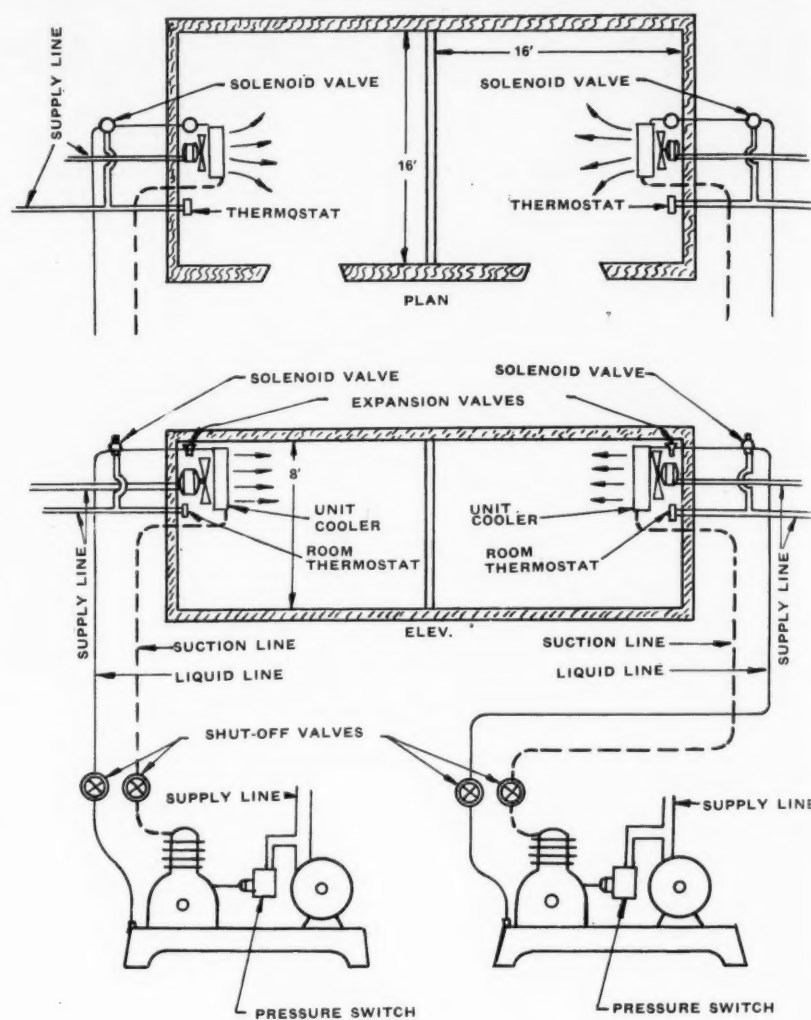
## CLASS 9160 CAPACITY BOOSTER VALVE



Functions in the exact manner of its pilot—boosting the capacity of that pilot! Shown at left with Square D solenoid valve and thermostatic expansion valve in pilot circuit for air-conditioning.

**SQUARE D COMPANY**  
REGULATOR DIVISION  
DETROIT • MICHIGAN

Fig. 1—Control Setup For Cooling System



temperature of 90°. The insulation is composed of 3 inches of rock wool supported by two 7/8 inch layers of wood.

From receiving records, it is found that the maximum produce put into storage per 24 hours is 2,000 lbs. per refrigerator. This consists of assorted fruits and vegetables arriving at a temperature no higher than 90°.

### Load Calculations

Both refrigerators being identical, the load on each will be the same. The calculations below are for each refrigerator, and are based on the maximum load requirements, i.e., minimum temperature conditions.

Total exposed surface = 1,024 sq. ft.  
Area exposed to refrigerated space = 128 sq. ft.  
Net area = 896 sq. ft.  
Cubical content = 1,575 cu. ft.

B.t.u./24 hrs.  
Insulation loss =  $896 \times .09 \times 50 \times 24 = 97,200$   
Usage loss =  $1,575 \times 1.1 \times 24 = 41,600$   
(see Table 3)  
Product load =  $2,000 \times .9 \times 50 = 90,000$   
\*Allowance for respiration = 3,000

Total load = 231,800  
Hourly load based on 16 hours operation = 14,500 B.t.u./hr.  
\*Assuming average rate of 3,000 B.t.u. per ton per 24 hours.

### Usage Factors

Empirical usage factors for fruit and vegetable refrigerators, expressed in B.t.u. per hour per cubic foot of interior volume, and based on a temperature difference of 50°-60° between ambient temperature and refrigerator.

Size Factor  
Under 300 cu. ft. .... 4.1  
300-500 cu. ft. .... 2.6  
500-700 cu. ft. .... 2.1  
700-1,000 cu. ft. .... 1.6  
1,000-1,500 cu. ft. .... 1.3  
1,500-2,000 cu. ft. .... 1.1

### EQUIPMENT SELECTION

In an installation of this type it is logical to expect that at times the merchandise in the refrigerator will be packed solid without regard for the flue areas which would be necessary for gravity air circulation.

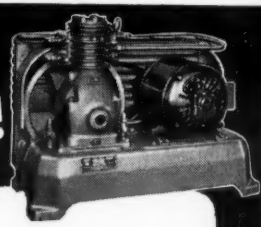
Forced air units are, therefore, more suitable, and should be selected



ELIMINATE  
CONDENSER WATER VALVE  
TROUBLES WITH THE TYPE WL  
ELECTRIMATIC VALVE for  
ALL UNITS UP TO 3 TONS

The **ELECTRIMATIC Corp.**  
2100 INDIANA AVE. CHICAGO, ILL.

EASY TO SELL!



More than 20 years of high reputation...in every kind of refrigeration service...has established the name "Lipman" as a BUY word that breaks down sales resistance. Make this reputation your sales asset...for greater profit and better customer satisfaction.

GENERAL REFRIGERATION DIVISION  
Yates-American Machine Co.  
Dept. AC-1 Beloit, Wisconsin

BUY  
**ACME**  
LIQUID RECEIVERS  
JACKSON ACME INDUSTRIES MICH.

Established 1854  
**CURTIS**  
REFRIGERATION  
AIR CONDITIONING  
COMMERCIAL  
Curtis Refrigerating Machine Division  
of Curtis Manufacturing Company  
1912 Kienlen Ave. St. Louis, Mo.



★★★★★★★★



**Mills Condensing Units**  
By Mills Novelty Company  
4100 Fullerton Ave., Chicago, Ill.

★★★★★★★★

*A Masterpiece for Economy*

### MASTERCRAFT ADJUSTABLE PAD AND CARRYING HARNESS



Efficient, sturdy and economical. Provides safe handling and thorough protection of refrigerators. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad \$10.00 each  
Adjustable Harness \$6.50 each f.o.b. Chicago. Lettering on pad at only \$1.00 per order extra.

Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

**BEARSE MANUFACTURING COMPANY**  
INCORPORATED 1921  
3815-3825 Cortland Street, Chicago, Illinois

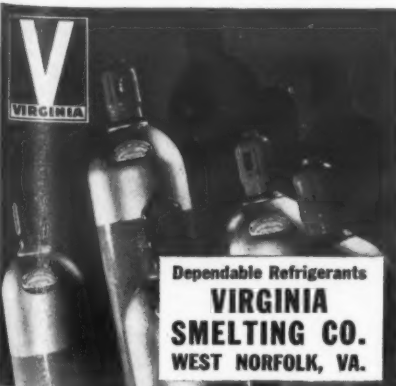
### KERO TEST

**Valves and Fittings**  
The Standard of the Industry  
Kerotest Manufacturing Co.  
Pittsburgh, Pa.

**U. S. GOVERNMENT Specification**

### Filtrine

**Cafeteria Coolers**  
Filtrine Mfg. Co., Brooklyn



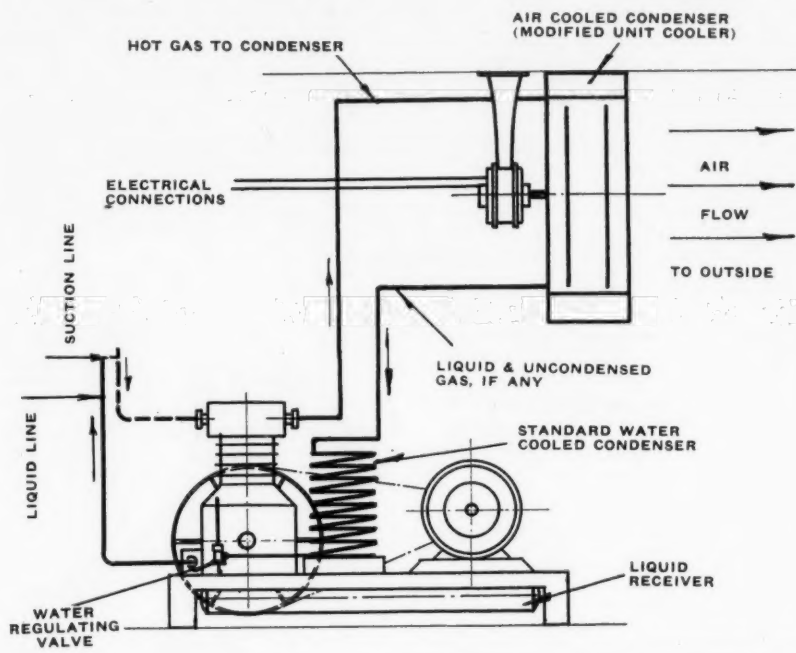
Dependable Refrigerants  
**VIRGINIA SMELTING CO.**  
WEST NORFOLK, VA.

**Ready, Willing, Able TRAINED MEN Available!**

It's easy to get the right man for your job without trouble, expense or delay. Use the U.E.I. Free Placement Bureau. National service. For over 13 years U.E.I. graduates have made better employees for all positions requiring technical knowledge or mechanical ability. We have the man you want. Phone, write or wire us.

**UTILITIES ENGINEERING INSTITUTE**  
Belden & Wayne Aves. (Est. 1927) Chicago, Illinois

Fig. 2 - Hookup For Special Condenser



### System Design For Produce Storage

(Concluded from Page 16, Column 5)  
Inasmuch as it will be desired at times to operate only one refrigerator, two condensing units, each with a capacity of 14,500 B.t.u./hr., would make a more practical installation.

For the installation under consideration, it turns out that it is impossible to use air cooled units because people are working in the room containing the condensing units, and the heat given off would be objectionable to them. On the other hand, water cooled units are not economically advisable because of the high water rates in this locality. A happy compromise, therefore, lies in the use of a remote air cooled condenser in series with the standard water cooled condenser which comes with the water cooled condensing unit. (See Fig. 2.) This type of condenser is in reality a modified unit cooler, installed at a convenient window so that the hot exhaust air is expelled to the outside, thus serving the added purpose of providing ventilation to the machinery room.

#### Condenser Installation

As shown in Fig. 2, the hot gas from the discharge valve of the compressor is piped to the remote condenser, which may be located up to 10 feet away without objectionable pressure drop. Depending on the size of this condenser and the temperature of the entering air, all or part of the refrigerant will condense here, and then proceed to the water cooled condenser.

It is necessary that the remaining gaseous refrigerant condense there before proceeding to the receiver. This can be accomplished by the use of a water regulating valve set to open only when the head pressure exceeds a set amount.

With a 20° evaporator and "Freon-12" refrigerant, a head pressure as high as 150 lbs. is permissible, and the water valve may be set to open at any pressure between 100 and 150. However, due to the saving in power consumption at lower head pressures, a water cut in pressure of approximately 125 lbs. will prove the most economical.

It will be seen that the larger the air cooled condenser, the lower will be the water consumption in the water cooled unit; at the expense, however, of increased power consumption.

The exact condenser size and water valve setting, therefore, must be determined from the ratio of power cost to water cost.

#### Installation of Controls

Bearing in mind that the installation must be so arranged that the purchaser may regulate with ease the refrigerator temperatures from 40°-55°, the use of a room thermostat calibrated in this range is necessary. Fig. 1 shows the location of this control in the warm air flue of the unit cooler. It is connected in series electrically with a solenoid valve in the liquid refrigerant line, thereby cutting off the flow of refrigerant to the unit cooler when the desired refrigerator temperature is reached.

The compressor operation is con-

trolled by a pressure control set to maintain a 25° evaporator temperature (cut out at 20 lbs. "F-12," cut in at 35 lbs.). When the action of the thermostat causes the liquid solenoid valve to close, the compressor will pump out the refrigerant in the unit cooler and the pressure will fall to the cut-out point in a few minutes.

Likewise, when the solenoid valve opens, the pressure will immediately build up to the cut-in point. Should an excessive product load tend to keep the room temperature up and the solenoid valve continually open, however, the pressure control acts as a check in preventing excessive icing up of the unit cooler, for as the icing up decreases the heat transfer efficiency of the unit cooler, the suction pressure will fall to the cut-out point.

### Defense Work Adds 1,000 To York Payroll

YORK, Pa.—Increased defense production has added 1,000 employees to the factory and branch personnel of York Ice Machinery Corp. since October, 1940. Payroll in manufacturing plants has been increased by 800, while 22% of the factory employees are now working night shift.

York has taken contracts for air conditioning and refrigeration equipment for the Navy and merchant marine; for army cantonments and naval supply bases; for powder, shell loading, and fuse plants; aircraft engine and aircraft assembly plants; and other essential applications.

All available machinery is working on sub-contracts for defense.

### Nelson To 'Head' NRDCG Retail Demonstration

NEW YORK CITY—Donald M. Nelson, Director of Purchases of OPM, has accepted the post of honorary chairman of the 1941 National Retail Demonstration, to be held the week of Sept. 15. The National Retail Dry Goods Association sponsors the demonstration.

### Kelvinator Votes Dividend

DETROIT—Directors of Nash-Kelvinator Corp. on May 22 voted a dividend of 12½ cents per share on outstanding capital stock, payable June 27 to stock of record at the close of business on June 12.



### "RANCO for MINE - Right Down the Line!"

Ranco leads the world in Exact Replacements! Built to save the time of service men, they assure EASIER WORK - BETTER PROFITS!

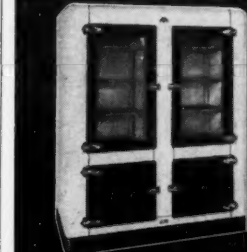
Ranco performance is outstanding. And Ranco Stainless Steel construction is a feature that will make a big hit with your customers.

**Ranco EXACT REPLACEMENT HOUSEHOLD REFRIGERATOR CONTROLS**



## THE BUYER'S GUIDE

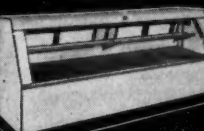
CLIMB ABOARD FOR BIGGER PROFITS!



Tyler Reach-In. Many sizes and door arrangements.



Refrigerated Vegetable Display. 6 or 9 ft. sizes.



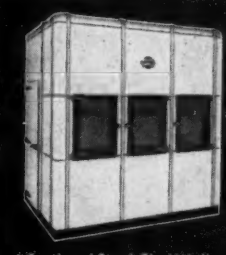
Meat Display Cases. Top Display and Double Duty.



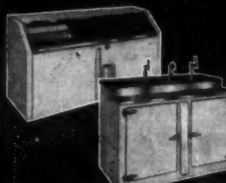
★ There's still time to tie up with Tyler—and really go places in '41. For this complete line is designed and built to fill every need—priced right. Buyers appreciate the extra value, too. Climb aboard now and get your share of profits!

**TYLER FIXTURE CORPORATION**  
Dept. R-3, Niles, Michigan

**TYLER DEALERS ARE MAKING MONEY!**



Sectional Steel-Clad Walk-In Coolers.



Tyler Dry Cold Beverage Cooler and Draw Cold Beer Dispenser.



**THE HARRY ALTER CO.**  
1728 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS  
3 CHICAGO BRANCHES, NORTH, WEST, SOUTH

NEW YORK  
PHILADELPHIA  
BRONX  
JAMAICA

NEWARK  
DETROIT  
CLEVELAND  
ST. LOUIS

## WELDED STEEL

**THE KOCH LINE IS Complete**  
Walk-In Coolers, Commercial Refrigerators and all types of Display Cases

Koch does not manufacture or sell condensing units. Koch distributors therefore furnish the units they sell.

Write Today for Information on PROFIT POSSIBILITIES

**KOCH REFRIGERATORS**  
NORTH KANSAS CITY, MO.



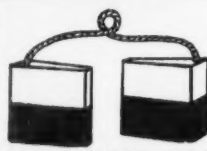


## 3 CATALOGS IN 1

1. Hermetic Units  
Compressors—Parts
2. Parts—Compressors—Evaporators  
Frigidaire—Kelvinator—Norge  
General Electric and etc.
3. Complete Line Refrigeration  
Parts—Tools—Supplies

Write for Your Copy on Your Letterhead

**SERVICE PARTS CO.**  
1101-03 N. 24th Ave. Melrose Park, Ill.



IT WILL PAY  
GET OUR  
PROPOSITION  
ON  
**CARBON  
BRUSHES**

M. G. VOLCKER - 112 E. 19 ST. - NEW YORK

### Rubber Belting Problems Discussed By Goodrich

AKRON, Ohio—To simplify the engineering problems involved in selecting the proper rubber belting, B. F. Goodrich Co. has published a 12-page catalog section, No. 2150, entitled "Selection and Maintenance of Rubber Transmission Belts."

The leaflet enables the reader to answer such questions as what type, grade, width, thickness, horsepower capacity, corrections of horsepower rating, length, importance of bearing capacity in applying rubber belts, belt joints, and endless belts.

Also contained in the publication are the latest results of experience in maintenance of rubber belting on such points as belt dressing, cleaning, storing, static, oil, and salvage of belts.

## Servicing Ice Cream Cabinets and Other Low Temperature Equipment

By Arch Black and Dean C. Seitz

**Editor's Note:** This is the third instalment of a new section on ice cream cabinet servicing in the series of articles which cover servicing of all types of low temperature refrigeration equipment for use in retail business. Most of the information will consist of a tabulation of the complaints and service remedies for the three main types of ice cream cabinet refrigeration systems.

### Service Complaints on Low Side Float Systems

The complaint given to the service man by the customer is the first clue to the source of the trouble. As was stated previously, practically all service complaints can be classified under 14 general headings. These headings are the complaints as given to the service man, either over the telephone or in person. The customer never knows what is causing the trouble—he merely knows the effect of the trouble on his own business.

The following is a list of the general service complaints that may be received on a low side float ice cream cabinet installation.

- 1—Ice cream too soft—refrigerating machine runs either normally or continuously.
- 2—Ice cream too soft—machine will not run.
- 3—Ice cream too soft on the top of the can—hard at the bottom of the can.
- 4—Machine runs too much of the time—ice cream either too hard or satisfactory.
- 5—The machine short cycles.
- 6—Machine is noisy.
- 7—Electric bills too high.
- 8—There is an objectionable odor around the ice cream cabinet.
- 9—Suction line frosts.
- 10—Bottles are too warm (combination ice cream cabinet).
- 11—Bottles are frozen (combination ice cream cabinet).
- 12—The electric lights flicker.
- 13—Radio interference.
- 14—Overload protection blows out continuously.

Under each one of these complaints it is possible to classify several causes. The remainder of the article on low side float ice cream cabinets will take up individually each one of these complaints, together with the most common causes for it and its remedies.

**COMPLAINT No. 1—Ice cream too soft—machine runs either normally or continuously.**

**Cause No. 1—Shortage of refrigerant.**

The first step is to place gauges on both the high pressure and low pressure sides of the system. Then make a mental note of the high side pressure and low side pressure with the condensing unit in operation.

Stop the unit for 10 to 15 minutes. If the high side pressure materially decreases from that noted just before the unit was stopped, the system is short of refrigerant. A float valve making a hissing noise will also indicate a shortage of refrigerant. As a further test, start the condensing unit and if the suction line does not frost, the system is short of refrigerant.

The remedy is to add the necessary amount of refrigerant to stop the hissing float valve. After refrigerant has been added the high side pressure should not be reduced materially when the condensing unit stops after a period of operation.

Never leave an installation on which it was necessary to add refrigerant without having located the cause of the shortage.

**Cause No. 2—Leaky float valve.**

To check the system for leaky float valve due to improper seating of the needle, allow the cabinet to stand idle for 10 to 15 minutes. Then start the condensing unit and if the suction line frosts, the float valve leaks due to improper seating.

Many times a float valve needle will be held slightly open by a small piece of dirt under the needle.

Before changing the entire valve, it should be flushed in an attempt to remove the dirt.

To flush a float valve, close the liquid line valve at the receiver. Run the condensing unit for 10 to 15 minutes. Raise the head pressure above normal by blocking the condenser on an air cooled condensing unit. Open the liquid line valve as rapidly and as widely as possible so that the liquid refrigerant rushing through the needle will have the effect of flushing it. Then open all valves to normal operating position and check whether the valve is still working properly. If it is, change the float valve assembly.

**Cause No. 3—Stuck shut float valve.**

In addition to causing soft ice cream, a stuck shut float valve will cause the evaporator to pump itself out and the suction pressure will be much lower than normal.

Before removing the float valve, tap it lightly with a hammer on the valve face plate. If this does not loosen the valve, then it will be necessary to remove it and install a new one.

**Cause No. 4—Dirty float valve strainer.**

The symptoms of this trouble are very similar to those of a stuck shut float valve. To remedy, pump the refrigerant charge back into the liquid receiver. Then balance the suction pressure slightly above atmospheric. Remove the evaporator liquid service valve and clean the strainers. Then replace the strainer and service valve, using a new gasket.

**Cause No. 5—Dirty liquid line strainers.**

The liquid line strainer consists of a fine mesh screen intended to prevent any dirt from getting into the low side of the system. If this strainer is dirty, it will cause soft ice cream with continuous operation when a thermostat type of temperature control is used. When a pressure type control is used, it will cause short cycling. The suction pressure will be lower than normal. If the strainer is partially obstructed, the liquid line most likely will be frosted.

The remedy is to pump back the refrigerant charge to the receiver, remove the liquid line strainer, clean it and reassemble.

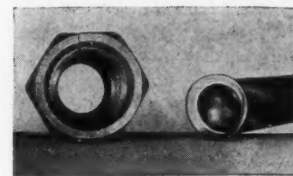
**Cause No. 6—Service valves not opened.**

The obvious remedy is to check all of the service valves and make certain that they are each open properly.

**Cause No. 7—Tubing kinked or flattened.**

This condition sometimes occurs when the tubing is bent on a sharp radius. It may also be caused by using flare nuts which have not been moisture proofed at the time of installation. Moisture proofing means filling up the cracks and crevices

### Fig. 4—Moisture Cracks



Flare nut cracked by moisture and collapsed tubing.

around the base of the flare nut with an asphalt emulsion to prevent condensate from getting under the flare nut, i.e., between the flare nut and the copper tubing.

If moisture gets under the flare nut it is possible for it to freeze at this point and force the copper tubing inward. This condition is not visible, for it will occur between the flare nut and the copper tubing. As a last resort pump down the suction line to approximately ½ lbs. above atmospheric pressure and look at the tubing under the suction line flare nut.

A kinked or flattened suction line will produce an excessive pressure drop which in turn may cause condensing unit to run at such reduced capacity that insufficient refrigeration is produced.

**Specify ALCO**  
**Engineered**  
**Refrigerant Controls for**  
**Maximum Performance**

ALCO VALVE CO. ST. LOUIS, MO.

**COMMERCIAL REFRIGERATORS**  
World's most complete line of commercial cabinets—13 to 84 cu. ft. capacity.  
**MIDWEST**  
MFG. COMPANY • GALESBURG, ILL.

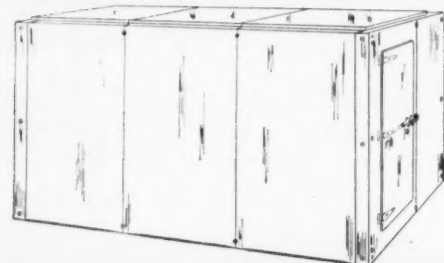
**COMPLETE LINE**  
of White-Rodgers Refrigeration Controls will solve your refrigeration and air conditioning problems. Write for condensed catalog.  
White-Rodgers Electric Co.  
1211 Cass Ave., St. Louis

**WATER COOLING EVAPORATORS**  
**COMPLETELY INSULATED**  
**KRAMER-TRENTON CO.**  
TRENTON, N. J.

**CAMPBELL REFRIGERATOR CO.**  
Milwaukee, Wis.  
Dealers Wanted for  
Midwestern and Southern  
States

**Use CHICAGO SEALS**  
for seal replacements  
A complete line in all sizes  
**CHICAGO SEAL CO.**  
20 North Wacker Dr., Chicago

### 'ARMOR-CLAD' WALK-IN COOLER



- ★ALL STEEL EXTERIOR
- ★LOW IN COST  
(Due to volume production)
- ★REAL FLEXIBILITY  
(Easily enlarged by adding sections)
- ★EASY TO ERECT  
(2 unskilled workmen sufficient)
- ★SMALL STANDARD-SIZE SECTIONS  
(Portable and easy to handle)
- ★UNLIMITED RANGE OF SIZES
- ★PROMPT SHIPMENT

**FOGEL REFRIGERATOR COMPANY** Since 1899  
Philadelphia, Penna.

### COLD! --and PURIFIED

For nearly 40 years Puro has specialized in drinking water equipment. Many water coolers supply cold drinking water—no other offers the advantage of a self contained purifier—a sales point that means profit to dealers everywhere. Write for detailed information about our complete line for all purposes.

**PURO**  
WATER  
TRADE MARK

**ELECTRIC WATER COOLERS**  
Puro Filter Corp. of America, 440 Lafayette St., New York

**Only POLARTRON**  
Offers Truly Independent Adjustment

This exclusive  
MINNEAPOLIS-HONEYWELL  
feature enables you to change  
either the ON or OFF pressure  
without affecting the other

**MINNEAPOLIS-HONEYWELL**  
MINNEAPOLIS-HONEYWELL REFRIGERATION COMPANY  
2307 FOURTH AVENUE, SOUTH, MINNEAPOLIS, MINNESOTA  
CHICAGO PLANT: CHICAGO, ILL. PLANT: ST. LOUIS, MO. PLANT: ST. PAUL, MINN.

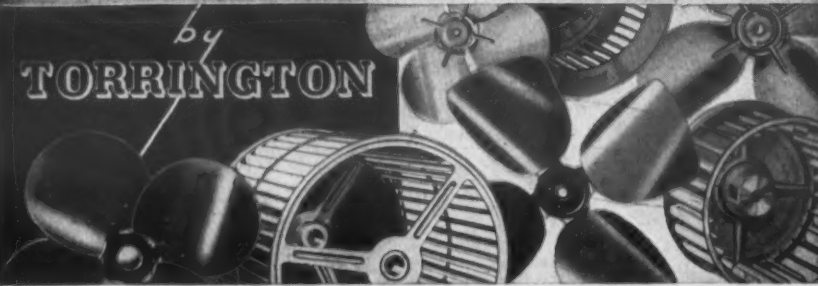
### HUMI-TEMP UNITS

In these units you will find the quality and perfection that has meant greater sales and greater profits on a nation-wide basis. Let us convince you. See your jobber or write us today.

LARKIN COILS, INC. 519 Memorial Drive, S. E. Atlanta, Georgia

Originators of The Cross Fin Coil

### Fan Blades and Blower Wheels



THE TORRINGTON MANUFACTURING CO. of TORRINGTON, CONNECTICUT

**TO SHERER  
FOR PROFIT**  
WITH COMMERCIAL REFRIGERATORS

Follow the profit road with Sherer. A complete line of display and storage refrigerators and full factory cooperation makes the going easier. Write for complete franchise details.

**SHERER-GILLET CO. MARSHALL, MICH.**

Once a Guest Always a Friend

**HOTEL  
WOLVERINE**

Comfort at the Wolverine means more than just its excellent accommodations. An atmosphere of congeniality and friendliness is ever-present within this famous hotel, making each guest feel the warmth of home—in the courteous service of trained employees and in the hospitable attitude of the management.

500 ROOMS \$2.00  
WITH BATH from  
ELIZABETH ST. EAST  
AT WOODWARD AVE.

**DETROIT**





## Airtemp's Clinic Has Real 'Clinical' Touch



"The Human Boiling Point"—was one of the demonstrations staged at the Airtemp conference to show the effects of high temperatures on the human body. The healthy specimen of manhood shown above was subjected to 22 minutes of gruelling heat in the white cabinet at right. Readings taken by the physician (left) and nurse (center) indicated that tropic heat produces a sharp rise in pulse rate, blood pressure, and respiration within a short period of time.

## Editors See How Tropical Heat Affects Man In 'Human Furnace' Display During Airtemp Round Table Meeting

(Concluded from Page 1, Column 2) they are, man is able to effect intelligent control of his environment, particularly by his regulation of indoor atmosphere.

"While air conditioning means 'cooling' to the average person," Mr. Thorpe said, "year-around air conditioning is rapidly becoming a tool of industry—a tool enabling industry to do more work economically."

As examples of this situation, Mr. Thorpe cited the existence of a cigarette factory inside the Arctic circle; the British steel mills in India which now run continuously through the hottest weather; air conditioned buses across the Arabian desert to Baghdad; and comfortable apartments in the heat of Mexican cities.

Declaring that the armament program would not materially decrease the number of unemployed in this country, because a large percentage of this group are "unemployable," Mr. Thorpe asserted that the problem, in this age of shorter hours and higher pay for industry was one of increasing production with the facilities we have.

Pointing out how volume production of air conditioning units would tend to reduce the price as the market broadened and advertising increased, Mr. Thorpe cited the fact that in 1929 400,000 refrigerators were produced at an average retail price of \$485, with an advertising cost of \$8.50 per unit.

During 1940, by comparison, 2,500,000 refrigerators were produced, at an average market price of \$149 and with an advertising cost of only 85 cents per unit.

In his "kickoff" speech which opened the discussions at the morning meeting, George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS, told how air conditioning was to have great importance in the development of the Western Hemisphere.

Pointing out that it is difficult to keep men working in the tropics, Mr. Taubeneck asserted that air condi-

tioning will make it possible for workmen to follow capital in developing the wealth of Central and South America, thus raising the standards of living of our neighbors.

"The war has made air conditioning essential to many industries almost overnight," Mr. Taubeneck said, "and as a result the post war development of the industry will be very great. Men working in air conditioned plants will learn the value of controlled atmosphere—and these men will carry the idea of air conditioning into millions of American homes."

"This 'fanning out' of an essential service can be compared to the transition of multiple apartment house refrigeration systems to individual units in the American home. As young couples accustomed to electric refrigeration moved out of apartments and into single homes, they demanded refrigerators. This factor had an important effect on the development and sale of household refrigeration, and we have a similar situation in the air conditioning industry almost at hand. Men working in 'blackout' plants will learn that air conditioning is a necessity to comfortable living almost overnight, and will soon demand this service in their homes."

Herbert C. Siekman, editorial director, "American Restaurant" magazine, spoke on the importance of air conditioning in the restaurant business, and how it had become a competitive necessity in this field. Kenneth H. Bonham, editor of the "American Druggist," reported that air conditioning increased the druggists' volume, eliminated waste, increased employee efficiency, and tended to level the overhead over the entire year.

John O'Brien, associate editor, Progressive Grocer magazine, spoke on the effect of air conditioning on "perishables" in the grocery trades. Mr. O'Brien pointed out that while strawberries, lettuce, and other fresh goods may be perishable, employee efficiency, appearance, and general atmosphere may also be highly perishable in very hot weather.

Lee Hickey, editor, "Department Store Economist" magazine, related that while central station systems are of great importance to large department stores, there is a market for packaged equipment and small systems at points in the establishment "where the customer sits down." This thinking would apply to shoe departments, men's shops, luggage departments, as well as to restaurants and tea rooms.

After a trip through the Airtemp factory, Roger Sherman, editor of "Architectural Record," outlined the growing importance of air conditioning on the design of modern buildings and envisioned a great future

for the industry, because "out of every war effort comes an impetus to rebuild." Mr. Sherman described the relationship between air conditioning and architecture as being similar to the effect of the automobile and the highway system on each other.

Bernard Johnson, editor of the "American Builder" magazine, pointed out that the building field is not in competition with defense industries, but must continue as a valuable adjunct to the defense effort. Mr. Johnson asserted that the use of insulation, weather stripping, double glass, and other refinements of the modern home was preparing these houses for air conditioning.

Dr. A. G. Young, director of medical research, Corey Hill hospital, Brookline, Mass., gave editors present some findings of the medical profession covering the use of air conditioning in therapeutics and diagnosis.

"In the case of allergy," Dr. Young said, "air conditioning has definite diagnostic value. We can tell if the patient gets hay fever from something that is inhaled, by protecting the patient from air borne pollen. Relief for the patient, however, may depend on 100% elimination of pollen—and this is seldom possible with ordinary air filters."

In severe cases of pollen allergy, Dr. Young suggested equipment for a room in the patient's home, taking air from the hall, instead of from outdoors, unless the patient were found to be sensitive to house dust.

"We have been hearing about the economic side of air conditioning here today," Dr. Young said, "and strangely enough, hospitals having air conditioning can improve their summer business and spread their patient load more evenly over the entire year."

To show what happens when a man is subjected to tropical heat, Allen P. Livar, research engineer for Airtemp staged a graphic demonstration of "the human boiling point" before the assembled editors. In this demonstration a strong, healthy young man, weighing 231 lbs. entered a cabinet having a temperature of about 122° F. for 22 minutes.

Before entering the cabinet the subject, examined by a physician, who took measurements of body temperature, blood pressure, respiration, pulse, and weight. The same readings were taken after a period of 22 minutes in the "hot box." The results follow:

	Before	After
Blood Pressure	155	172
	88	84
Body Temperature	98.8° F.	100.2° F.
Respiration	18	24
Pulse	80	128
Weight	231 lbs.	231 lbs.

The demonstration graphically illustrated what happens to the human body (in this case at rest) under abnormally high atmospheric conditions. The high temperature and sharp increases in blood pressure, pulse, and respiration would be further aggravated if the patient were at work under similar conditions.

## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS WANTED

SALESMAN, complete refrigeration, commercial, walk-in coolers, display cases, reach-in boxes, air conditioning, etc. Capable closer. Successful proven past record. Excellent references. Go anywhere. Can create and close own prospects. Please state particulars. Reply Box 1334, Air Conditioning & Refrigeration News.

REFRIGERATION Institute graduate desires connection with a future. At present operating service station in central Michigan. 24 years old. American. Married. Reliable. Have had slight experience. Reply to Box 1335, Air Conditioning & Refrigeration News.

### FRANCHISES AVAILABLE

DIRECT Factory connection. Sell refrigerator display cases, walk-in coolers, reach-in refrigerators, refrigerating units, to meat markets, grocers, taverns, etc. Financing arrangements to help sell. Write for full information or see EHRICH REFRIGERATOR MFG. CO., St. Joseph, Mo., Dept. A.

GENERAL Refrigerator Company is an-

nouncing the new 1941 line. General Display Cases, Reach-In Cabinets, Walk-In Coolers and Beer Pre-Coolers. For almost half a century we are manufacturers of the highest quality commercial refrigerators. Compare with other higher priced lines. Write in for prices and discounts on the biggest money making line in the country. GENERAL REFRIGERATOR CO., 5th & Bainbridge Sts., Philadelphia, Pa.

### EQUIPMENT WANTED

WANTED—500 General Electric monitor top refrigerators, DR-1 and DR-2. Will pay top prices for them. MACKLAM REFRIGERATOR SALES & SERVICE CORP., 220-222 W. Huron St., Chicago, Ill.

### EQUIPMENT FOR SALE

SURPLUS STOCK. Brand new Westinghouse low-sides, complete, ready to be hooked up to the compressor. AC models \$32.50 each. DC models—easily converted to AC—\$18.50 each. 1/2" Mueller strainers, complete with 1/2" to 3/4" flare nuts, 60¢ each in lots of five. Shrouds for G-E Monitor Tops, entire lot of 100, 60¢ each. "As Is" commercial units of all types. Frigidaire blower, suitable for use in conjunction with 3 hp. unit, ideal for large walk-in cooler \$75.00. Write for details. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Ave., Philadelphia, Pa.

### REPAIR SERVICE

CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

### PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## Anaconda Copper Refrigeration Tubes

New cup seal keeps them clean and dry



### THE AMERICAN BRASS CO.

FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.

## Specify Fedders UNIT COOLERS

FEDDERS MFG. CO. BUFFALO, N. Y.

## For Information on Motors FOR ALL TYPES OF Air Conditioning and Refrigeration Equipment WRITE TO

Wagner Electric Corporation  
441 E. FIFTH AVE. ST. LOUIS, MO.



### PREVENT WAX and CARBON with an AMINCO Oil Separator


Aminco Oil Separators remove oil from gases as they leave the compressor and return it automatically to the crankcase, preventing oil-logged evaporators and increasing the efficiency of the unit. Helps to prevent the formation of hard carbon and wax deposits by separating entrained moisture from the oil and settling it in a sump where it can do no harm.

Send for Bulletin No. 14

### AMERICAN INJECTOR COMPANY

1481 FOURTEENTH AVENUE, DETROIT, MICH.  
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles  
Export: Borg-Warner International Corp., 310 S. Michigan Avenue, Chicago, Ill.





## Henry Dehydrator


### Combination Dehydrator with Liquid Indicator and Dispersion Tube

Gas bubbles (uncondensed refrigerant) passing underneath indicator sight glass denote shortage of refrigerant. Gasketed cap is used on the liquid indicator to provide an additional seal and protect glass from breakage and dirt.

ASK YOUR JOBBER FOR IT

FILLED WITH SILICA GEL

HENRY VALVE CO., 1001-19 N. SPAULDING AVE. CHICAGO

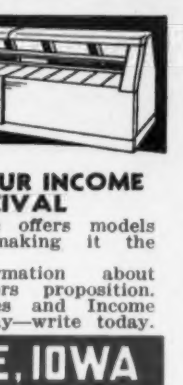


### INCREASE YOUR INCOME WITH PERCIVAL

The complete PERCIVAL line offers models and sizes for every purpose—making it the "Dealers Choice."

Write for complete information about PERCIVAL's attractive distributors proposition. You too can increase your Sales and Income "the Percival way"—so don't delay—write today.

### C.L. PERCIVAL COMPANY, BOONE, IOWA





### TECUMSEH PRODUCTS IS THE LARGEST INDEPENDENT MANUFACTURER OF REFRIGERATION UNITS

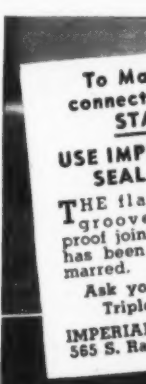
OVER 900,000 UNITS IN USE TODAY.

### TECUMSEH PRODUCTS CO.

TECUMSEH, MICH.

Correction of Ad Issued May 28th





### To Make a tight connection that will STAY tight

### USE IMPERIAL TRIPLE SEAL FITTINGS

THE flare extrudes into groove making a leak proof joint even when seal has been badly nicked or marred.

Ask your jobber about Triple Seal Fittings

IMPERIAL BRASS MFG. CO.  
565 S. Racine Ave., Chicago

## IMPERIAL

VALVES • FITTINGS • TOOLS  
CHARGING LINES • FLOATS  
STRAINERS • DEHYDRATORS



For Highest Air Filtering Efficiency, Demand—

## AIR-MAZE

Permanent Air-Filter Panels

AIR-MAZE CORP., CLEVELAND OHIO

CHARGED WITH SILICA GEL

## Specify DRYERS

THAT BEAR THIS LABEL

Ask your Jobber



## Spare Ribs Win G-E Range For New York Housewife



Mrs. Robert Lane of Amenia, N. Y., who submitted the winning spare ribs recipe in the first of the 10 "Roast of the Month" contests sponsored by the General Electric range department, is awarded the deluxe G-E range by Dealer John Patten of Poughkeepsie. Later she cooked spare ribs right in the store.



Mrs. Lane, Mr. Lane (behind spare rib), and Edwina Nolan Daily, G-E home service director, enjoy a victory dinner of—spare ribs.

## 3,000 Enter G-E's First Meat Recipe Contest

POUGHKEEPSIE, N. Y.—Of the more than 3,000 meat recipes entered in General Electric's first of 10 "Roast of the Month" contests, the one for spare ribs submitted by Mrs. Robert A. Lane of Amenia, N. Y. was judged the best. Prize was a "Stratoliner" electric range.

Some 300 letters a day are being received in this contest, announced in national magazines in March. A range will be awarded each month, and at the end of the contest, the best of the 10 monthly winners will receive a grand prize of a complete kitchen.

Mrs. Lane came into Poughkeepsie, shopping center of this area, for the presentation, which took place at the store of John B. Patten, G-E dealership. Mr. Patten presented the range in the presence of representatives from G-E headquarters in Bridgeport, Conn. and from Rex Cole, Inc., New York distributor.

After receiving the range, Mrs. Lane cooked barbecued spare ribs right in the store and passed samples to friends and neighbors who had been invited in. A broadcast over station WKIP followed, and the day closed with a dinner party at the Nelson House featuring—spare ribs. The day, incidentally, was the Lanes' tenth wedding anniversary.

## C. C. Whitlock Killed In Auto Accident

DALLAS, Tex.—C. C. Whitlock of Electromotive Corp.'s sales staff and formerly sales manager for Refrigeration Supply Co. was killed and his wife and son injured when his car collided with an oil truck near Waxahachie, Tex. Mr. Whitlock was returning from a sales trip to Waco, Tex.

## Refrigeration Engineer Conceives Air Defense

(Concluded from Page 1, Column 4) science of physics." The beauty of it is that it does not depend at all upon human guidance; it works on an immutable law of physics, and it's as certain as the sunrise.

Even more interesting to Americans is that we have the facilities and the resources to turn out far more of these devices than all the rest of the world put together.

The idea has been approved by such genius-inventors as "Boss" Kettering, "Bill" Stout, and Chrysler's Zeder. Its inventor holds several hundred patents in the aircraft and automotive fields, as well as in the refrigeration field. He is a past president of two national engineering societies, and is respected throughout the land as one of the leading practical engineers of the country. In the last war he manufactured airplane engines, and helped design and develop the world's first robot planes and dive bombers.

But here's the hitch: He can't seem to interest the army in this idea. It sounds "impractical" to the army men whom this inventor has contacted. (These same men turned down the tank-carrying plane as "impractical" when it was offered to them a year ago.)

Mr. Hoover, we have the invention—the successful defense against air attacks. Now what do we do?

## Vickers Joins Staff of Southern Wholesalers

BALTIMORE—George Vickers has joined the Baltimore sales force of Southern Wholesalers, Inc., distributor for Norge and RCA Victor. For the past eight years Mr. Vickers was employed by Fred B. Hamman Music Shop here.

## Rema Starts Activity To Get Refrigeration Relics For 'Antequarium' at 1942 Show

(Concluded from Page 1, Column 3) the 1942 Rema Exhibition Committee.

The committee, with the endorsement of the Board of Directors of Rema, has reserved adequate display space to house what will be the first strictly institutional exhibition of refrigeration and air conditioning literature, drawings, designs, models, documents, awards, medals, and antiques which can be uncovered during the next eight months for display at that time.

Beginning with technical displays by government agencies interested in refrigeration and air conditioning such as the U. S. Patent Office, the U. S. Bureau of Standards, the Department of Agriculture, and such other branches as have an interest in refrigeration and air conditioning along with the engineering colleges of the leading universities which are devoting time and effort to furthering the development of higher standards and wider applications in this field the committee then will extend the scope of its undertaking to what might be called a mobile museum.

Under the title of "The Antequarium" it is proposed to assemble the oldest models which can be found of the present-day products of the exhibitor firms such as the oldest compressor, the first expansion valve, the earliest type of finned and other types of coils, likewise of controls, evaporators and condensers, filters and dehydrators, gaskets, gauges, valves and fittings, and of countless

other "old timer" products over which the fathers of the present generation alternately enthused and wept.

Collections of early-day manufacturers' catalogs, sales literature, advertisements, and of early issues of our present trade papers, will make up another section of the displays in "The Antequarium."

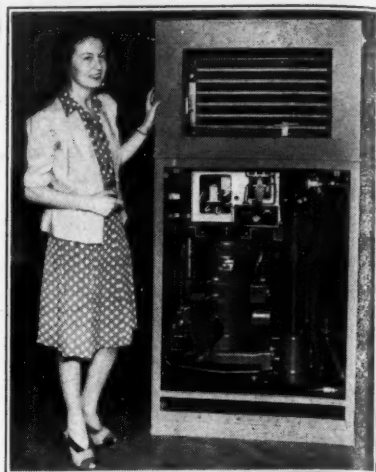
In another, it is hoped to have the original patent papers on epoch making inventions, on display; perhaps copies even of legal decisions in early-day litigation which involved important developments.

Honors to early-time inventors, promoters, and executives such as medals and awards in recognition of their achievements, will be on display in so far as these can be obtained.

A committee is to be appointed to devote its time exclusively to working out the plans, rounding up the displays, and to perfect the details for this interesting phase of the next All-Industry Refrigeration & Air Conditioning Exhibition.

Plans for the show already are well advanced, according to Chairman Benson. His committee this week sent out its first general announcement to prospective exhibitors who haven't participated in the previous All-Industry Exhibitions. Practically all of the former exhibitors are back in the Show for next January, a goodly percentage with orders for more space than used in the Show last January, he reports.

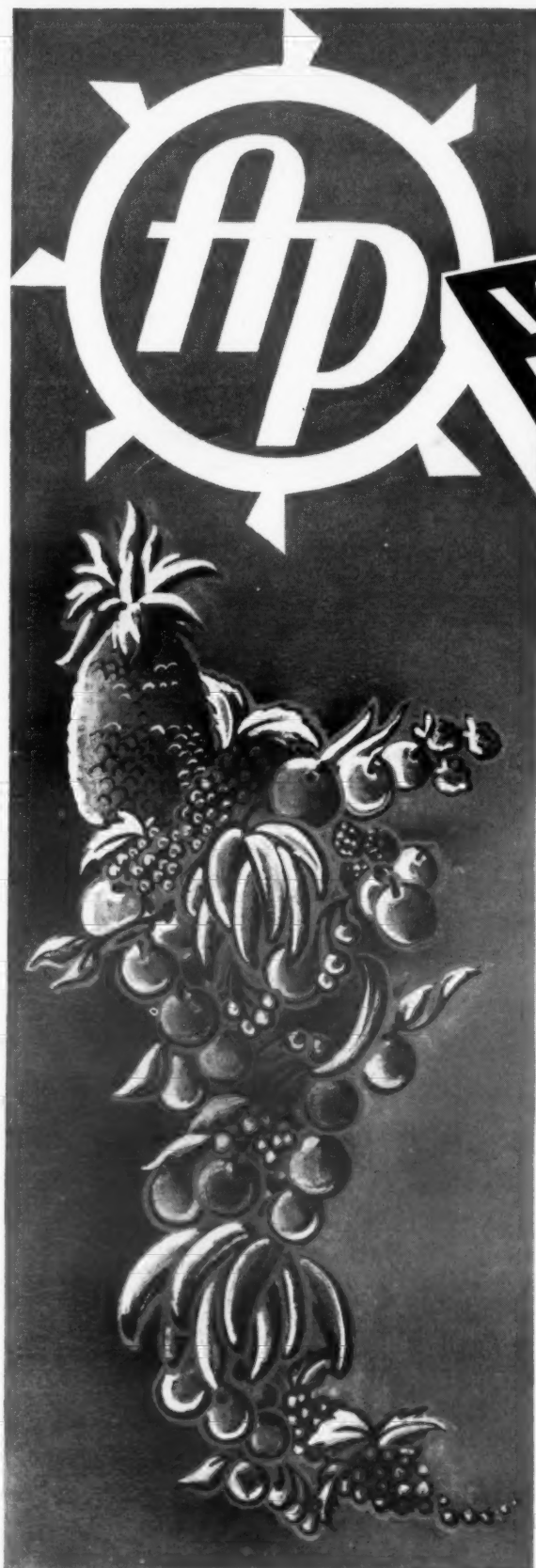
## Airtemp Engineer



Miss Henriette T. Betlem, formerly associated with Betlem Heating Co., Rochester, N. Y., and a member of A.S.H.V.E., has joined the sales engineering staff of Airtemp. Miss Betlem is now working with the central station department at Dayton, prior to joining the Airtemp branch in New York City.

## Erben To Manage G-E Central Station Dept.

SCHENECTADY, N. Y.—H. V. Erben has been named manager of General Electric Co.'s central station department to replace M. O. Troy, former manager, who will continue as commercial vice president. Mr. Erben first joined General Electric in 1917.



Valves fulfill their Responsibilities... In Every Type of Refrigeration!

## 'Storage of Perishables..

From tropical plantations . . . from fruit orchards . . . from vegetable farms located hundreds and even thousands of miles away—come the fruits and vegetables served on your dinner table today . . . Fresh, delicious, healthful food you take for granted.

It's a miracle of modern Refrigeration that makes this possible. And guarding the efficiency of this Refrigeration is an army of small valves—A-P DEPENDABLE VALVES . . . Providing accurate Refrigeration Control for safe transportation and storage of these perishables. It's a great RESPONSIBILITY, a task that A-P Valves handle with notable success.

This DEPENDABILITY, the result of mechanical and engineering perfection, is YOURS to use for your own profit, and the satisfaction of your customers. Prove the Responsibility of A-P Valves the next time you service or install equipment that guards perishables.

## SERVEL Interchangeability SOLVES YOUR PARTS PROBLEM

This \$10 kit gives you all the parts you need to render field service on all Servel models from 1/5 to 10 HP. Write for details. Servel, Inc., Electric Refrigeration & Air Conditioning Division, Evansville, Ind.



Progressive Service Engineers use and recommend . . . and aggressive Jobbers stock and talk A-P Products

AUTOMATIC PRODUCTS COMPANY  
2450 NORTH THIRTY-SECOND STREET  
MILWAUKEE WISCONSIN

A-P CONTROLS ARE DEPENDABLE